A Work Project presented as part of the requirements for the Award of a Master Degree in Finance from the NOVA – School of Business and Economics.

Ryanair is Flying Above the Clouds

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A Project carried out on the master's in finance Program, under the supervision of:

Rosário André

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Abstract

This paper intends to evaluate Ryanair's share price by the end of 2020 by applying two valuation methods: Multiples and DCF. Ryanair is the largest European Airline Group presenting the highest market share in passengers' traffic and setting historical lowest average fares in the European airline industry. We believe that Ryanair will keep ahead of competition, once we predict a strong performance for the upcoming years. Our price recommendation is to 'Buy' grounded in a price target of 16.77€ and an expected stock return of 16.1% in one year from now.

Keywords: Airline, Low-Cost, Leader, Europe

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RYANAIR HOLDINGS PLC

COMPANY REPORT

AIRLINES

3 JANUARY 2020

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Ryanair is flying above the clouds

The European Permanent Winner

- We are long on Ryanair's stock, supporting a 'BUY' recommendation with the underlying price target of 16.77€. Ryanair's strengths such as its most competitive average per passenger fare (37€ FY19 vs. 47€ Wizz Air; 61€ EasyJet), the lowest unit cost of EU airlines (Cost per Booked Pax.: 47€ Ryanair vs. 56€ Wizz Air and 64€ EasyJet), and considerable margins (Operating Margin: 13% FY19 vs. 13% IAG; 8% Lufthansa), allow the airline to progress within a fierce environment in the European airline sector;
- We expect further boost in demand (RPMS Growth: +4.2% FY21; +2.7% FY20) and even higher load factor (97% from FY20 onwards) leading to the most competitive average fares (36.6€ FY21; 36.8€ FY20).
- In addiction the arrival of the new Boeing 737-MAX-200, with higher number of seats per aircraft (+4% than Boeing 737-800) and lower fuel consumption per seat (-16%) will allow the airline to save on fuel costs in the next 5 years (CAGR 2020-2024: -2.2%);
- We forecast a FCF of 656.8€ in FY21 lower than the FCF of 2216.7€ in FY20 due to heavily investment on Boeing 737-Max-200 (+60 aircrafts FY21). Multiples from the DCF valuation are 9.8x EV/EBITDA, 13.4x EV/EBIT and 13.0x P/E whereas multiples from comparable airlines suggest 5.4x EV/EBITDA, 9.9 EV/EBIT and 11.2x P/E.

Company description

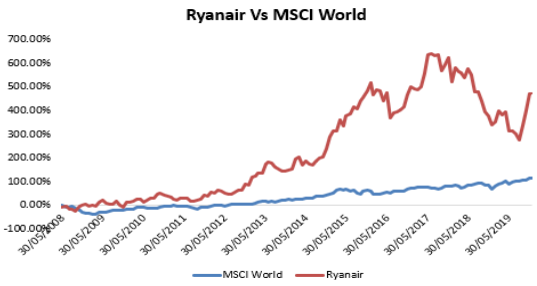
Ryanair is an Irish low-cost airline which not only offers low air fares but also other ancillary services. It operates mainly in Europe with more than 2100 different routes and offers 2400 short-haul flights a day. It has a team with around 19000 employees who serve 219 airports in 39 different countries and with a record number of passengers (142M /+9% booked passenger in FY2019).

Recommendation:	**BUY**
Vs Previous Recommendation	
Price Target FY21:	**16.77 €**
Vs Previous Price Target-:	
Price (as of 5-Jan-20)	**14.87 €**

Source: Bloomberg

52-week range (€)	8.39-14.97
Market Cap (€m)	16,853.7
Outstanding Shares (m)	1,133.40

Source: *Bloomberg & Annual Report*



MSCI World & Ryanair Cumulative Returns
Source: Bloomberg & Analysts Estimates

(Values in € millions)	2019	2020E	2021F
Revenues	7697.4	7912.0	8284.0
Schedule Revenue	5261.1	5360,2	5566.3
Ancillary Revenue	2436.3	2551.8	2717.8
Operating Costs	5956.2	5505.4	5662.9
EBITDAR	1737.7	2405,0	2619.3
EBITDAR margin (%)	22.6%	30.4%	31.6%
NOPLAT	945.9	1511.7	1634.7
FCF	1297.0	2116.7	656.8
EPS	0.78x	1.29x	1.38x
ROIC (%)	19%	26%	31%
Growth Rate (%)	19%	-10%	19%

Source: Annual Report and Analysts Estimates

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Executive summary

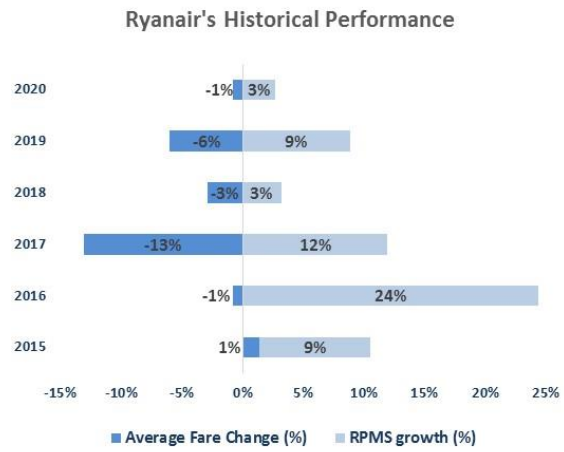

Exhibit 1: Ryanair's Average Fare Change and RPMS Growth
Source: Annual Report & Analysts Estimates

Overview: Ryanair has been pressured by tough competition in Europe, forcing its average fares to drop year after year (Δfare prices: -0.8% FY20 est., -6.0% FY19; FY18 -2.9%). In a saturated market as the European short-haul sector, Ryanair ceases to appeal to a growing demand (RPMS growth: +3.2% FY18; +8.9% FY19) by setting prices lower than its peers (Average fare: 37€ vs 47€ Wizz Air and 61€ EasyJet) (see *Exhibit 1*). The fierce competition has displayed several bankruptcies (Thomas Cook Airlines failure[1] and Air Berlin[2]) as well as numerous mergers and acquisitions in the industry (M&A activities: IAG & AER Lingus[3]; Ryanair & Buzz, Malta and Laudamotion). Inevitably, we believe European airlines are entering in a stage, whereby leading airlines are starting to grow inorganically by taking others' failures as opportunities.

Risk factors: Ryanair has been running its business in turbulent times of political, economic and regulatory issues. First, Brexit which was prolonged for quite long-time hitting UK's demand (in 3% to 5%)[4]. Second, uncertainty associated to 2014 Boeing Contract – waiting for FAA and EASA certification – which may culminate in further aircraft delays[5]. Third, operating costs which tend to increase such as airports and handling charges (in % operating costs: 20.4% FY20; 17.8% FY19) in capacity constrained airports as well as fuel costs which are an unpredictable part of Ryanair's costs and cannot be passed away through average fares to passengers (Ryanair's no-fuel-surcharges policy).

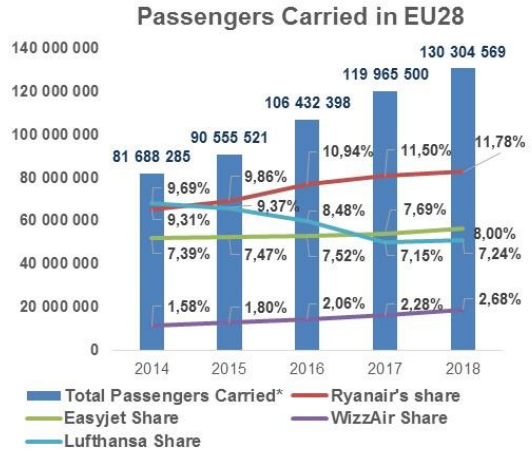

Exhibit 2: Annual Air Traffic Share of Passengers Carried in EU28 countries
Source: IATA & Analysts Estimates

Reasons to Believe: We still believe in a further boost in demand (RPMS growth: +4.1% FY22; +4.2% FY21) related to GDP growth of the countries in Ryanair's routes system. We also predict higher load factors to the upcoming years, as a result of Ryanair's effort to be the most efficient in Europe (i.e. *"the cleanest greenest major airline"*). In addition, the arrival of the new Boeing 737-Max-200 with the most efficient fuel consumption (-16.0% fuel consumption per seat) and higher seats per aircraft (+8 seats/+4%). And lastly, we factor out Ryanair's market share in passengers' traffic as positive sign of its successful performance in within European Union frontiers (see *Exhibit 2*).

[1]Thomas, Daniel and Hancock, Alice.2019."Cost of Thomas Cook collapse becomes clearer". *Financial Times*. Retrieved from: https://www.ft.com/content/1104e16a-dee8-11e9-b112-9624ec9edc59
[2]Heller,Gernot.2017."Aviation regulation at fault for Air Berlin failure: German tourism body". *BNN Bloomberg*. Retrieved from: https://www.bnnbloomberg.ca/aviation-regulation-at-fault-for-air-berlin-failure-german-tourism-body-1.843808
[3] Boland,Vincent. 2015. "IAG cleared for Aer Lingus takeover". *Financial Times.* Retrieved from: https://www.ft.com/content/9fd19dec-2a5c-11e5-acfb-cbd2e1c81cca
[4] International Air Transport Association (IATA). 2019
[5] Hepher, Tim 2019. "Exclusive: Europe regulator to clear Boeing 737 MAX in January at earliest". *Reuters*. Retrieved from : https://www.reuters.com/article/us-ethiopia-airplane-easa-exclusive/exclusive-europe-regulator-to-clear-boeing-737-max-in-jan-at-earliest-idUSKBN1X021S

Considering all factors mentioned, but not including Brexit and Aircraft delays in the analysis, our price recommendation is 'Buy', since the underlying price target is 16.77€. Including Brexit, our price recommendation is to 'Buy' if the U.K demand decreases by 3% and 'Hold if it decreases between 4% and 5%. Finally, when we take into account aircrafts grounded our price recommendation is 'Buy' whereas in a situation of Boeing delays the price recommendation changes to 'Sell'.

Company Overview

Ryanair DAC (Designed Activity Company) is an Irish company founded in 1985 by Christopher Ryan, Liam Lonergan and Tony Ryan, with headquarters in Dublin, Ireland. Ryanair became the first European airline to replicate 'Southwest Airlines' business model, not merely by offering low fares but also by implementing low-cost operations.

Subsequently to deregulation in EU, Ryanair expanded operations all over Europe. In 2016 Ryanair was proclaimed *"the largest European airline in scheduled passengers flown reaching 100M passengers in one year."* In 2017 'Ryanair Sun' was formed, it is Ryanair's subsidiary in Poland. In 2018, Ryanair acquired a 75% stake in 'Laudamotion', successfully appropriating from its fleet that comes from another supplier (Airbus A320). Immediately after in 2019, the fifth airline acquired by Ryanair was 'Malta Air', the one planned to ensure connections between Europe and Africa, flying to over 60 destinations. Still in 2019, Ryanair bought the remaining 25% stake of 'Laudamotion' and rebranded 'Ryanair Sun' as 'Buzz'.

Nowadays, Ryanair has more than 2100 different routes throughout Europe, and offers more than 2400 short-haul flights a day, serving 219 airports in 39 different countries, with approximately 19000 employees and close to 142M scheduled passengers in FY2019. In 2019, Ryanair added 86 more airports to its network.

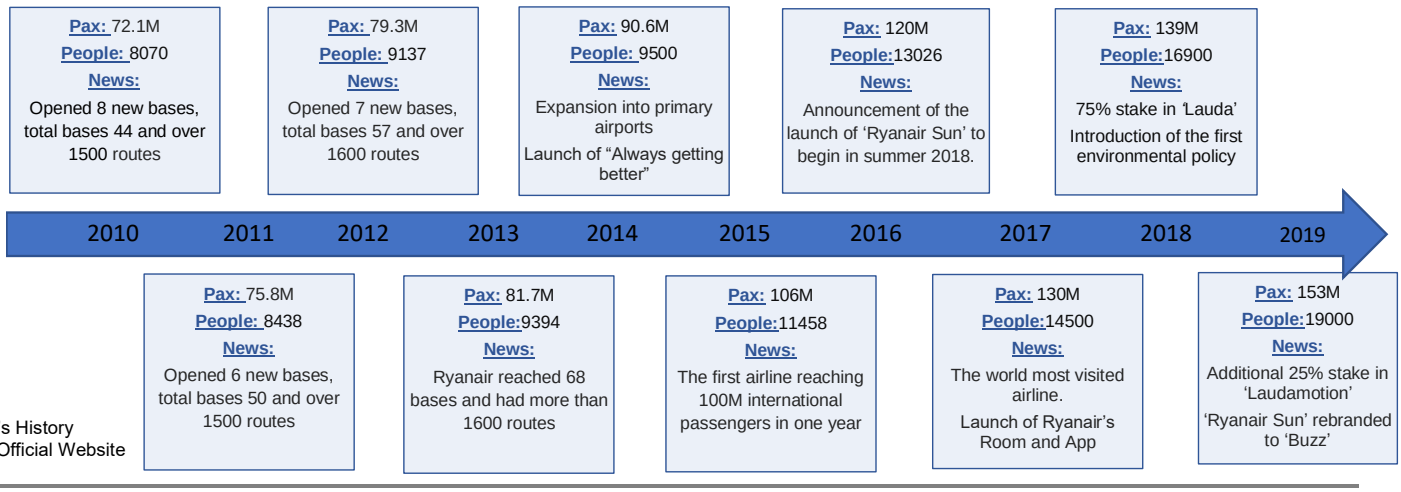

Exhibit 3: Ryanair's History
Source: Ryanair's Official Website

Shareholders Ownership

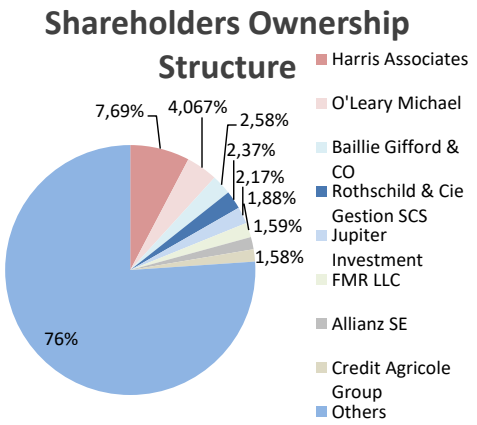

Exhibit 4: Ryanair's Largest Shareholders
Source: Bloomberg & Analysts Estimates

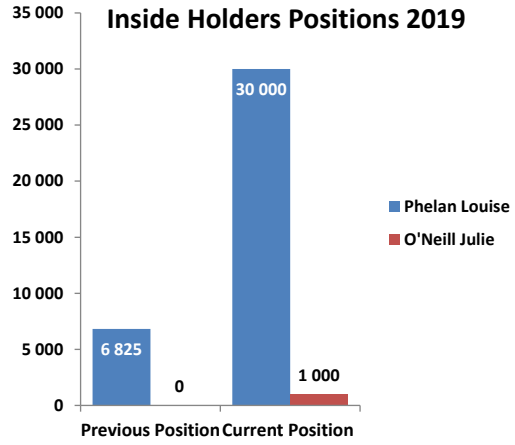

Exhibit 5: Inside Holders Changes in Positions, 2019
Source: Bloomberg

Ryanair Holdings PLC has a total of 271 institutional investors who own 430.97M shares (nearly 38% of Ryanair total ordinary shares). Ryanair has 44.1% of shares outstanding of which 43.3% are float shares.[6]

Shareholders with higher percentages of Ryanair's shares are represented on the left pie (see *Exhibit 4*).

Inside holders' positions have changed during 2019. Two of the eight Ryanair's Holdings PLC inside holders raised their exposure to Ryanair by buying more shares of the airline (Phelan Louise +23175 shares to 30000 shares) and O'Neill Julie (+1000 shares to 1000). Regarding the CEO O'Leary Michael, he also bought an additional amount (+2M shares to 46096725 shares) in 3rd quarter of 2019. These evidences are aligned to our view that Ryanair is currently undervalued (see *Exhibit 5*)

Under EU regulation, Ryanair is required to be majority owned by EU citizens in order to safeguard its operating license inside EU frontiers. To set up this requirement the management team established a maximum number of ordinary shares held by non-EU citizens. If needed the management team may ask non-EU shareholders to dispose from their shares within a 21 days period. Recently, the "permitted maximum" shares were set at 49.9% of Ryanair shareholders ownership structure.

Strategy

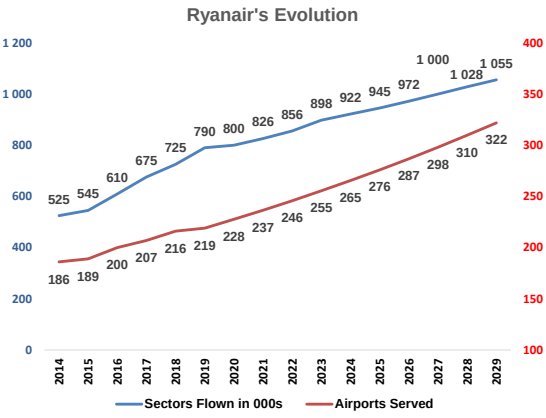

Exhibit 6: Ryanair's Sector Flown and Airports Served Evolution
Source: Annual Report

Concerning its long-term strategy, Ryanair is seeking to implement "aggressive fare promotion" (i.e. *"early breaks flights from 14.99€"* which are their low-cost getaways and special occasion advertising *"Cyber week with 50000 seats 5€ each"*)[7], rise routes inside Europe and to North Africa together with escalating flights to main destinations (Sectors flown: 800005 FY20; 826149 FY21; Δ+3.3%) and finally aims to increase the number of airports within its itinerary (nº of airports served: FY20 228 airports and FY21 237 airports; Δ+3.9%) (see *Exhibit 6*).

Regarding fare prices, these are set on basis of demand for a certain flight and the time for the flight to depart. The higher the demand the higher will be

[6] Bloomberg
[7] Ryanair website: https://www.ryanair.com/gb/en

the price and the sooner the time for the flight to depart, the more expensive will be for customers. Our research team expects annual average fares to change according to the load factors, which is foreseen to be higher for the upcoming years (Load factor: 96% FY19 and 97% FY20-FY29) and as result averages fares decrease (Average Fares: 37.03€ FY19 and 36.75€ FY20).

Last but not the least, Ryanair customer service is also a relevant part of Ryanair's strategy which is constantly monitored in order to guarantee the highest standards of customers' service are achieved. For instance, comparing Ryanair versus its peers, Ryanair is the leader in punctuality with a target higher than 90% and the best on avoiding losses in bags.

All in %	Ryanair	Easyjet	IAG	Lufthansa	WizzAir
Punctuality Metric	>90%	75%	76%	72%	72%

Exhibit 7: Punctuality across Airlines
Source: Airlines Annual Reports

There are indeed other elements which may jeopardize Ryanair's strategy and its low-cost business that will be further detailed such as on the side of costs, fuel costs (being the largest extent of Ryanair's costs) and airport and handling charges (that will likely to rise due to the lack of available airports' slots). On the side of the revenues is the economic growth (GDP which directly explains Ryanair's demand).

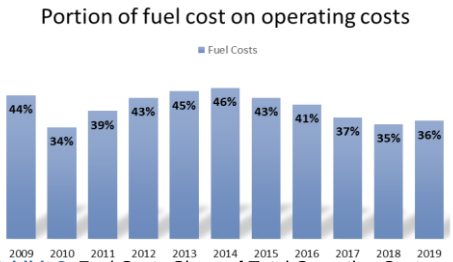

Exhibit 8: Fuel Costs Share of Total Operating Costs (2009-2019)
Source: Annual Report

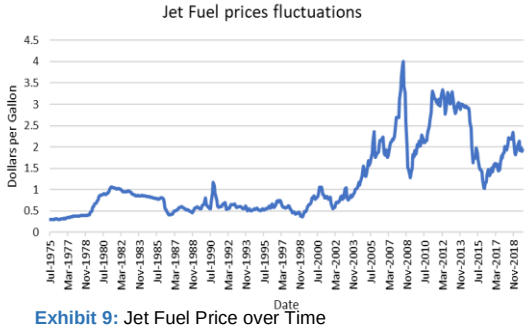

Exhibit 9: Jet Fuel Price over Time
Source: U.S. Energy Information Administration

Macro-Economic Trends

Fuel Costs

Fuel cost are indeed the predominant cost of airlines' cost structure, representing close to 25%[8] of average operating costs among airlines worldwide and around 36% of Ryanair's operating costs (see *Exhibit 8*).

Jet fuel primary source is the crude oil. The last as any commodity is subject to wide price fluctuations that arise from underlying political and economic issues such as international terrorism or hostility periods for instance, recent China-US Trade War, Iran's Oil Exports and limited spare capacity in OPEC[9] (see *Exhibit 9*). Nonetheless, there are even more conditionings that may lead to further price changes such as by the fact that crude oil is priced in U.S. dollars. It turns out to be risky to airlines, with revenues/income in other currencies by exposing them to the exchange rate risk. Particularly the case

[8] Source: International Air Transport Association (IATA,2019)
[9] Ntshalintshali,Thembinkosi.2018."Oil Prices and the airline Industry" *Trade Finance Global*. Retrieved from:https://www.tradefinanceglobal.com/posts/oil-prices-and-the-airline-industry/

of Ryanair, once its fuel costs are denominated in Euros, the airline is by all means subject to the strength of Dollar against Euro and consequent impact on its performance.

Therefore, jet fuel costs volatility combined with FX risk, encourage airlines to minimize losses through hedging strategies i.e. forward contracts. However, there are indeed certain limitations since these contracts do not fully protect the investor or neither work in a very long horizon.

Among European Airlines, Ryanair is the most covered by hedging strategies, presenting forward hedging contracts that protect nearly 90% of 2019 fuel costs requirements versus Lufthansa which hedges 76%, IAG 69%, EasyJet 68% among others (see *Exhibit 10*).

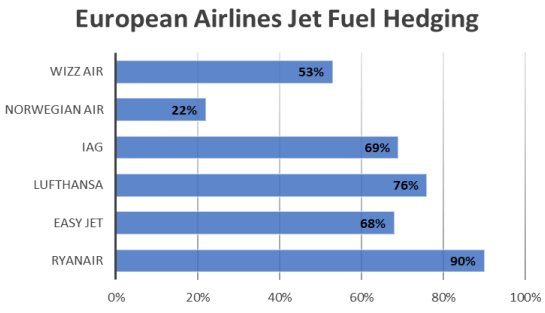

Exhibit 10: Extent of Jet Fuel Hedging
Source: Annual Reports

There is an alternative way to save on fuel costs, by acquiring modern aircrafts with higher number of seats and lessen fuel consumption per seat (-16%) i.e. the order of Boeing 737-Max-200 by Ryanair.

GDP

The aviation sector accounts significantly to the economic development, by noticing its contribution of 3.6% on the global gross domestic product. At the European level the contribution is smaller but still relevant accounting to 2.1%[10] of European GDP.

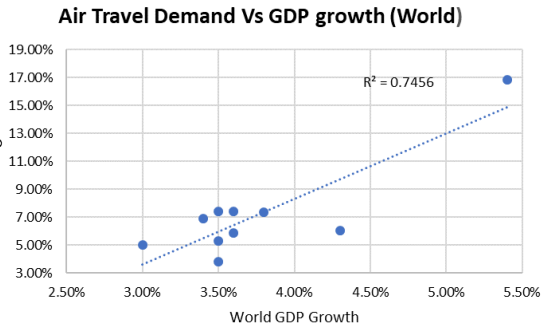

Exhibit 11: Regression Analysis between Air Travel Demand and Global GDP Growth
Source: Analysts Estimates & World Bank data

There is a peculiar correlation between Gross Domestic Product (GDP) and RPK (R2= 75%[11]) (see *Exhibit 11*). The former, which is representative of all economic activity, when used to forecast air traffic demand, it is so broad that it can in fact reflect economic, demographic and income factors in the evolution of the aviation sector. Analysing a series of data from 1980 to 2018, evidences show a clear relationship between GDP and air passenger demand: whenever GDP growth decreases, also air traffic demand shrinks (see *Exhibit 12*).

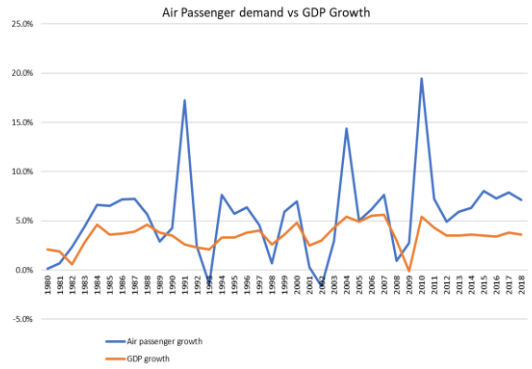

Exhibit 12: GDP Growth and Air Traffic Demand (1980-2018)
Source: World Bank Data

In countries with higher GDP (i.e. developed countries) usually the previous correlation is even more powerful.

Ryanair operates mainly in Europe and recently extended operations also to North Africa. In those regions real GDP growth is foreseen to be 1.50% and 3.60%[12] accordingly. The year 2019 was exceptional because in fact the previous correlation was not verified. In other words, in spite of economic and

[10] European Commission. 2019." Mobility and Transport". Accessed on December 28. https://ec.europa.eu/transport/modes/air_en
[11] Resulting from a regression between the world air passenger demand and the world nominal GDP, in a period of 38 years (1980-2018).
[12] International Monetary fund (IMF)

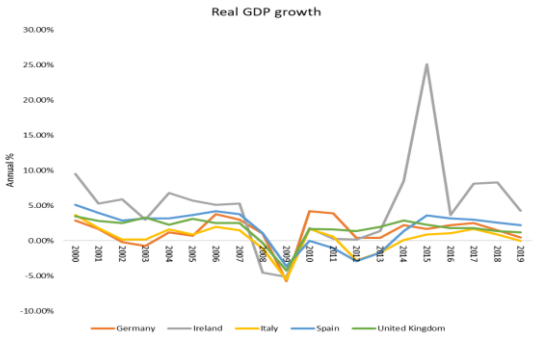

Exhibit 13: Real GDP growth (2000-2019)
Source: IMF

political uncertainties – arising due to Brexit as well as US-China Trade war - RPK growth rate was still 7.7% in Europe and 5.1%[13] in Africa.

In the case of Ryanair, even though Ryanair is headquartered in Ireland, a country which has presented high GDP growth along the last 6 years, it still has a great share of its revenues coming from UK operations and thus subject to UK's decline in GDP growth due to Brexit. (see *Exhibit 13*).

Brexit

United Kingdom aerospace is an important country in European Airline industry

UK has a privilege location with around 80%[14] of North Atlantic Traffic passing through U.K. and Irish controlled space. Besides that, several consolidated airlines have their headquarters in U.K such as the case of EasyJet and British Airways. Concerning airports, the Heathrow Airport, in London is ranked at the 7th position in the Top 20 of the busiest airports worldwide rank, by Airports council International 2019.

Therefore, UK is by no means, a significant region to the airline sector, and considering the regression above, if any economic bust is to happen due to Brexit, also a decrease in air passenger demand is very likely to display. Estimates suggest that air traffic demand in UK can shrink in an interval from 3% to 5%[15] in 2020.

The outcome of Brexit meaning, trade deal negotiations that are to happen between UK and EU can end in no more than 3 scenarios, impacting UK's economy also at very different levels: Hard Brexit, Non-Deal and Soft Brexit.

Ryanair's shareholders structure is likely to be compromised after Brexit

In the event of a Hard Brexit, all UK citizens will be considered non-EU citizens, in that sense, Ryanair could be majority owned by non-EU citizens, with almost 70%[16] of non-EU shareholders. Nevertheless, due to Ryanair's rule of Non-EU shareholders restricted shares, a significant part of them will have to return their shares to other EU citizens.

The result of a Non-Deal scenario between EU and U.K., is a possible GDP decrease at around 5.5%[17].

The end scenario is a Soft Brexit which is the underlying assumption of our model, by supporting the hypothesis of U.K. together with EU, remaining as a single market and thus avoiding any sudden disruption of their historical trade relations.

[13] Boeing Market outlook: https://www.boeing.com/resources/boeingdotcom/commercial/market/commercial-market-outlook/assets/downloads/cmo-sept-2019-report-final.pdf
[14] International Air Transport Associatiom.2018." A study of the effects of the United Kingdom leaving the European Union on airlines flying to and from the UK". Retrieved from: https://www.iata.org/contentassets/e22c55cf063a47d5915886f6675c1f39/iata-brexit-study.pdf
[15] International Air Transport Association (IATA, 2019)
[16] Ryanair's Annual Report
[17] Partington, Richard and Wearden.2019."Bank of England: no-deal Brexit less severe than first though". *The Guardian.* Retrieved from: https://www.theguardian.com/politics/2019/sep/04/bank-of-england-revises-impact-of-no-deal-brexit-from-8-to-5-of-gdp

There are other additional fluctuations such as volatility in global stocks' market and currency exchange fluctuations likely to jeopardize company's performance. A referendum may expose UK to a loss of about 11% due to pound sterling devaluation, affecting Ryanair's revenues at around 22% which is the share of Ryanair's revenues coming from UK and which are paid in pound sterling. Each 1 pence sterling fluctuation in Euro-Sterling exchange rate means 7M€ of losses in Ryanair's income.

Brexit was extended until 31st of January 2020 and up until that moment U.K will be still EU member, integrating European Union Aviation Safety agency.

Long-Haul versus Short-Haul

New Low-Cost Business model, with more complexity

In general, LCCs have operated under a short-haul flights system, but recently there has been a shift from these airlines to operate in the long-haul market (a shift from 1% to 4% in 2018[18]). The change came as a result of higher market complexity as well as more demanding customers. In Europe the first LCC to extend its operations to the long-haul was Norwegian in 2013, followed by Eurowings, Primera Air and many others that came later.[19]

In addiction there has been a number of partnerships within the industry with short-haul airlines partnering with mid to long-haul airlines for instance EasyJet joined forces with Emirates[20] and Ryanair with Air Europa in 2018[21].

Ryanair's partnership with Air Europa happened due to the aim of Ryanair to start flying to North, Central and South America, however there were many issues with the booking system integration and therefore this partnership did not last long.[22]

Other steps were given by Ryanair with intent of starting to serve in the long-haul. The investment in the new Boeing 737-MAX-200 and the recent acquisition of Malta Air (which already offers long-haul routes), both open that possibility.

[18] Boeing Market outlook 2019: https://www.boeing.com/resources/boeingdotcom/commercial/market/commercial-market-outlook/assets/downloads/cmo-sept-2019-report-final.pdf
[19] Centre for Aviation (CAPA). 2018." Europe's Low cost long haul airlines establish themselves". Retrieved from: https://centreforaviation.com/analysis/airline-leader/europes-low-cost-long-haul-airlines-establish-themselves-439156
[20] Smith,Matt.2018. "Emirates Partnership with Easy Jet set a strengthen company's European network". *Arab News*. Retrieved from: https://www.arabnews.com/node/1414206/business-economy
[21] O'Halloran, Barry.2018."Ryanair customers able to book flights from Malta". *The Irish Times*. Retrieved from: https://www.irishtimes.com/business/transport-and-tourism/ryanair-customers-able-to-book-onward-flights-from-malta-1.3603323
[22] Vannahme, Adrian 2019. "Ryanair Ends Partnership with Air Europa". Airline Geeks. Retrieved from: https://airlinegeeks.com/2019/02/24/ryanair-ends-partnership-with-air-europa/

Air Traffic Growth

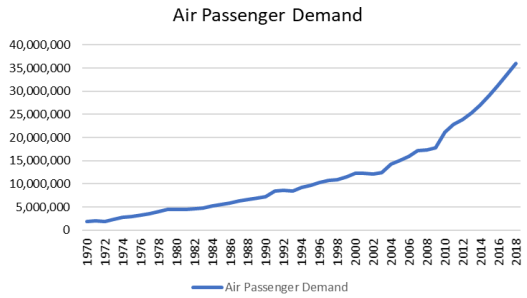

Exhibit 14: Air Passengers' Demand worldwide(1970-2018)
Source: World Bank

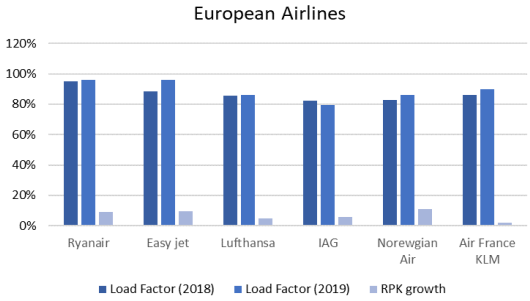

Exhibit 15: Airlines Load Factor and RPK Growth
Source: Annual Reports

Air passengers' demand has been increasing in the last decades, mainly due to economic growth, as previously mentioned (see *Exhibit 14*).

In the next 20 years, world air passenger traffic is foreseen to reach a robust growth by presenting an average 4.6%[23] year on year.

Ryanair operates in North Africa (8% share) and Europe (92% share) continents, being the latter its most significant market so far. From 2018 to 2019 passengers' demand growth was 6.9% in Europe whereas in Africa it was only up by 2.6% [24]. Ryanair overcame European demand growth denoted by its RPMS growth of 9% in FY19 that compares to RPMS growth of other peers of 5% Lufthansa and 6% IAG however still lower than EasyJet 9.4%.

The present challenge to airlines is to resolve the conflict arising from overcapacity while aiming to meet the growing demand. The way airlines have addressed this issue is by investing into more efficient aircrafts and by always ensuring the highest load factors possible (see *Exhibit 15*).

Ryanair's demand increases of 8.9% was also accompanied by the rise of 9.3% of the available seat miles ("ASMs") and the most competitive load factor of 96% which reports its competitive advantage in efficiency matters.

The Sector

Revenues	2017	2018	2019	Change 2017/2018	Change 2018/2019
Ryanair	€ 6,648	€ 7,151	€ 7,697	7.6%	7.6%
Easyjet	€ 5,047	€ 5,898	€ 6,385	16.9%	8.3%
IAG	€ 22,972	€ 24,406	€ 25,865	6.2%	6.0%
Lufthansa	€ 35,579	€ 35,844	€ 36,933	0.7%	3.0%
Wizzair	€ 1,571	€ 1,948	€ 2,319	24.0%	19.1%
AF/KLM	€ 25,867	€ 26,515	€ 27,643	2.5%	4.3%
Dart Group	€ 1,729	€ 2,392	€ 3,143	38.3%	31.4%

Exhibit 16: Airlines Total Revenues and Revenues Growth
Source: Annual Reports

Total Operating Costs	2017	2018	2019	Change 2017/2018	Change 2018/2019
Ryanair	€ 4,530	€ 4,840	€ 5,956	6.8%	23.1%
Easyjet	€ 4,314	€ 4,940	€ 5,444	14.5%	10.2%
IAG	€ 20,245	€ 20,728	€ 22,505	2.4%	8.6%
Lufthansa	€ 35,153	€ 35,393	€ 37,315	0.7%	5.4%
Wizzair	€ 1,325	€ 1,656	€ 2,019	25.0%	21.9%
AF/KLM	€ 21,966	€ 23,149	€ 24,267	5.4%	4.8%
Dart Group	€ 1,626	€ 2,261	€ 2,940	39.0%	30.0%

Exhibit 17: Airlines Total Operating Costs and Operating Costs Growth
Source: Annual Reports

European air traffic in number of passengers carried has been constantly growing at around 6% CAGR between 2014 and 2018 in EU 28 countries[25]. Ryanair is the market share leader of Europe air traffic (Market Share FY18: 11.8% Ryanair versus 8.0% EasyJet, 7.2% Lufthansa, 2.7% Wizz Air, 2.7% Air France and 2.7% IAG). Prominent airlines have also presented substantial revenues' growth rates such as Air-France (+4.3% FY19) and IAG (+6,0% FY19). In the case of LCCs, this growth is even more impressive if we take some examples i.e. Wizz Air (+19.1% FY19), EasyJet (+8.3% FY19) and Ryanair (+7,6% FY19) (see *Exhibit 16*)

Simultaneously operating costs have also been growing , sometimes even more than revenues, in Europe airline sector (Δ Operating Costs: +30% Dart Group, +23,1% Ryanair and 21,9% Wizz Air) (see *Exhibit 17*) and therefore profits are consequently compromised within the sector (Profit/Change in

[23] International Air Transport Association (IATA,2019)
[24] European Travel Commission.2019. "European Tourism-Trends&Prospects". Retrieved from: https://etc-corporate.org/uploads/2019/07/ETC_Quarterly_Report_Q2_2019.pdf
[25] Eurostat

Profit for the Year	2017	2018	2019	Change 2017/2018	Change 2018/2019
Ryanair	€ 1,316	€ 1,450	€ 885	10.2%	-39.0%
Easyjet	€ 305	€ 592	€ 349	94.1%	-41.0%
IAG	€ 2,021	€ 2,897	€ 2,419	43.3%	-16.5%
Lufthansa	€ 2,340	€ 2,163	€ 1,384	-7.6%	-36.0%
Wizzair	€ 246	€ 275	€ 292	11.8%	6.0%
AF/KLM	€ 163	€ 409	€ 171	150.9%	-58.3%
Dart Group	€ 77	€ 111	€ 146	44.3%	31.5%

Exhibit 18: Airlines Total Profit and Profit Growth
Source: Annual Reports

2018-2019: 885M€/-39% Ryanair versus 349M€/-41% EasyJet, 292M€/+6,0% Wizz Air and 171M€/-58,3% Air-France) (see *Exhibit 18*).

Profits shrunken also led to several mergers and acquisitions activities in the airline sector. Airlines with sustainable competitive advantages ended up acquiring those that fall behind such as the following cases: IAG & AER Lingus merge[26] and Ryanair acquisitions of Buzz, Malta Air and Laudamotion. In other words, consolidated players in the sector took over from these opportunities (Ryanair and IAG) and started investing in inorganic growth.

One existing issue in the airline industry that results from a saturated market as of today, is overcapacity of slots in airports. Recently airlines have been ordering huge amounts of aircrafts to their fleets in an attempt to address future growth in demand for flights.[27] However, there is now a clear problem of available space in airports. To handle this, some airlines have attempt to change from narrow-body aircraft such as Ryanair from Boeing 737-800 with 189 seats, to wider body aircrafts the Boeing 737-MAX-200 with 197 seats, carrying more passengers per aircraft (see Exhibit 19)

Future Orders of Wide-Body Aircrafts to Short-Haul	Nº of Aircrafts	Model	Nº of Seats
Easyjet	103	A320 Neo & A321 Neo	194/244
Ryanair	210	Boeing 737-Max-200	197
Lufthansa	140	A320 Neo	194
WizzAir	129	A321Ceo & A321Neo	230/244

Exhibit 19: Future Orders of Wide-Body Aircrafts to the Short-Haul Market
Source: Annual Reports

Comparable

- Low-Cost Carriers

The low-cost business model was founded in 1971 by Southwest Airlines. And as soon as deregulation in the EU happened, the low-cost model was also implemented in Europe. Ryanair was the pioneer, with first flights starting in 1985. After Ryanair, its main competitor EasyJet was founded in 1995. The success of the low-cost business model is specifically assured by a large demand attracted by low-cost services' convenience and budget fares.

	Ryanair	Easyjet	IAG	Lufthansa	WizzAir	AF/KLM
Operating Margin	13.0%	n.a.	13.2%	8%	14%	12%
Average per Passenger Fare (€)	37.0 €	61.0 €	191.0 €	176.0 €	47.0 €	210.0 €
Revenues Booked Passenger	54.2 €	74.8 €	216.0 €	198.9 €	65.8 €	259.8 €
Booked Passeger Load Fsctor	96.0%	93%	83%	81%	91%	90%
Cost Per Booked Passenger	47.0 €	64.3 €	187.5 €	147.7 €	56.0 €	228.1 €
tal return on capital employ	11%	12%	17%	8%	16%	8%

Exhibit 20: Comparable Airlines Analysis
Source: Annual Reports & Analysts Estimates

[26] Boland,Vincent.2015. "IAG cleared for Aer Lingus takeover". *Financial Times*. Retrieved from: https://www.ft.com/content/9fd19dec-2a5c-11e5-acfb-cbd2e1c81cca
[27] Bouwer, J. & Maxwell, D. & Saxon Steve 2015. "Gridlock on the ground: How airlines can respond to airport congestion". McKinsey. Retrieved from: https://www.mckinsey.com/industries/travel-transport-and-logistics/our-insights/gridlock-on-the-ground-how-airlines-can-respond-to-airport-congestion

Airlines	Net Debt To Equity
Ryanair	9.29%
Easyjet	9.31%
IAG	18.38%
Lufthansa	37.04%
Wizzair	-84.24%
AF/KLM	383.75%
Southwest Airlines	4.25%
JetBlue	16.08%

Exhibit 21: Airlines Capital Structure
Source: Bloomberg

In order to compare Ryanair with companies with similar operating model, we choose LCCs not only from Europe such as EasyJet and Wizz Air but also from US, Southwest Airlines and JetBlue Airways.

EasyJet is so far the most relevant comparable of Ryanair because it is the second airline after Ryanair with the highest market share of air traffic in EU-28 (Market Share: 8.0% in FY18). In addition, EasyJet has also competitive averages fares (61€ EasyJet versus 37€ Ryanair) and very high load factors (93% EasyJet versus 96% Ryanair). Its financing structure is also aligned to Ryanair's own capital structure (Net Debt to Equity: 9.31% EasyJet and 9.29% Ryanair).

Wizz-Air is another European LCC considered due to its impressive growth in revenues from 2017 to 2018 (+24%) and from 2018 to 2019 (19%). This growth was simultaneously accompanied by profit growth year after year (Profit growth: +6,0% 2018/2019; +11,8% 2017/2018). Besides, the Hungarian airline has also reached substantial load factors (91% Wizz Air), ending up with high operating margins (14% Wizz Air). However, when using comparable companies to find the unlevered beta of the industry as well as to compute industry multiples valuation we did not include Wizz Air once its capital structure is very far from Ryanair's own capital structure (Wizz Air Net Debt to Equity: -84.24%).

Finally, US comparable included for valuation purposes in multiples valuation were Southwest Airline (the largest low-cost airline at a global level) that inspired Ryanair, and which presents a similar capital structure (Net Debt to Equity: 4.25% Southwest Airlines) and price-earnings ratio (12.2x Southwest Airlines and 18.0x Ryanair). JetBlue was also selected to multiples valuation once is one of the biggest low-cost airlines in US showing similar levels of revenues and EBITDA as Ryanair (Revenues: 6991.05€ JetBlue versus 7697.4€ Ryanair) as well as identical capital structure (16.98% JetBlue).

- Legacy Carriers

Besides LCCs, other comparable companies included are long-haul airlines (Lufthansa and Air-France) as well a group (IAG).

IAG is a comparable airline in the sense that it is the owner of the second largest low-cost airline in Ireland after Ryanair, Aer Lingus, and even though overall group revenues and costs are distinct from Ryanair (Revenues per pax: 216.02€ IAG versus 54.17€ Ryanair; Cost per pax: 187.54€ IAG versus 47.02€ Ryanair) – once the group has acquired other long-haul airlines - they have both close to the same level of operating margins (13.2% IAG) and return on capital employed (17% IAG versus 11% Ryanair).

On its turn, Air France was also chosen given its high load factor (90% Air-France), and similarity of operating margins when compared to Ryanair (12% Air-France). However, we had to exclude from the analysis of the unlevered beta of Ryanair as well as from multiples valuation once it has a very distinctive capital structure (Net debt to equity ratio: 383.75%).

Finally, Lufthansa by being the carrier leader in Germany, and which recently has been attempting to set lower fares in order to compete directly with Ryanair on its 'home-market'. In addiction it is alike Ryanair in terms of capital structure (Net Debt to Equity: 37.04% Lufthansa) (see all in *Exhibit 20* and *Exhibit 21*).

Value Drivers

Revenue

Ryanair's country of origin is Ireland, nonetheless its operations are also relevant in other countries such as United Kingdom, Germany, Italy and Spain. Total revenues of the company have increased for the last 5 years. Despite the decrease of 3% in UK's demand segment from 2017 to 2018, that followed the announcement of a possible Brexit (see *Exhibit 22*).

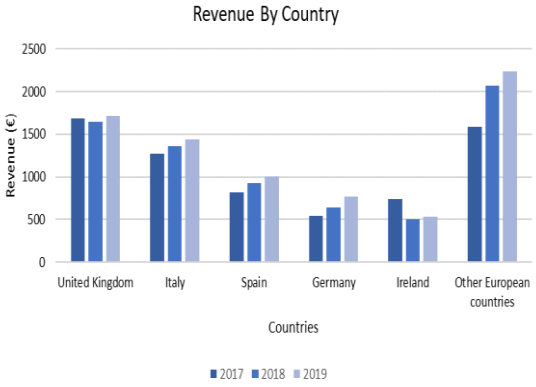

Exhibit 22: Revenues by Country
Source: Annual Report

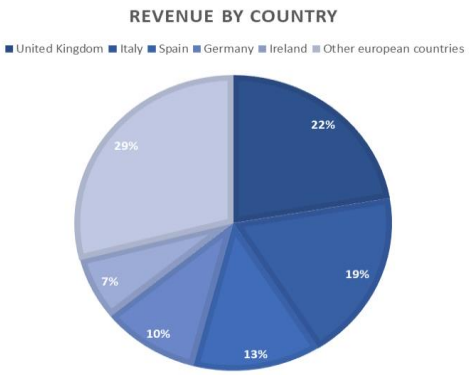

Exhibit 23: Countries share of Total Revenues
Source: Annual Report

As previously stated, UK is the country where Ryanair collects the highest revenues (22% share of total revenues), followed by Italy (19% share) and Spain (14% share) (see *Exhibit 23*).

Our research team witnessed that due to overcapacity in Europe, average fares have been pushed down, especially in Germany – given that Lufthansa by buying Air Berlin, gained more capacity and strengthened its position in the country, forcing Ryanair to set very competitive fares (37€ vs 176€)

In the FY 19 there was an increase of 2% in total revenues which is driven by the increase in the number of passengers of 9% that clearly offsets the decrease in 6% of the average fare (see *Exhibit 24*).

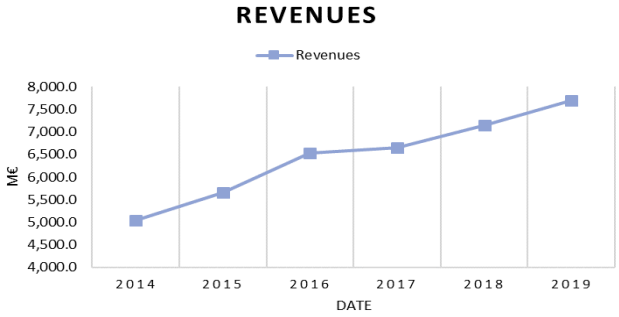

Exhibit 24: Ryanair's Total Revenues Past Evolution
Source: Annual Report

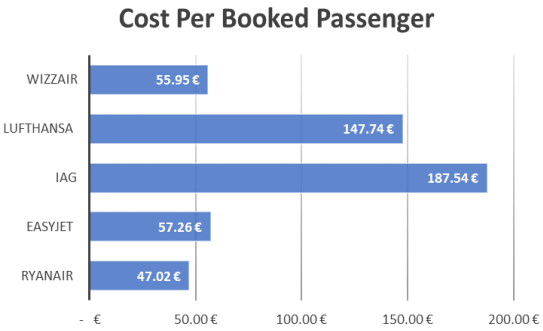

Exhibit 25: Airlines Cost Per Booked Passenger
Source: Annual Reports

Operating expenses

Ryanair has risen 12% its cost per booked passenger, from 42.08 € in FY18 to 47.02€ in FY19, due to higher oil prices (17% more fuel costs per booked passenger, representing 36% of the total Ryanair's cost structure), and staff and marketing costs (an increase of nearly 22% per booked passenger). To add up, there were EU261 costs that rose 44% as a result of several ATC staff strikes and some shortages in summer 2018, causing many flight delays and cancellations. Even though these increment in Ryanair's unit costs is significant, the airline still presents the lowest cost per passenger basis relative to its competitors (see *Exhibit 25*).

The graph below shows operating expenses increasing along the last five years from €4,378.1m in 2014 to €6,680m in 2019. All changes are due to fluctuations on following costs: fuel costs, airport and handling charges, staff costs, route charges, maintenance, materials and repairs, aircraft rentals and depreciation. Part of these costs are considered as cost of goods sold whereas the other part such as marketing, distribution and others are selling, general and administrative costs (see *Exhibit 26*).

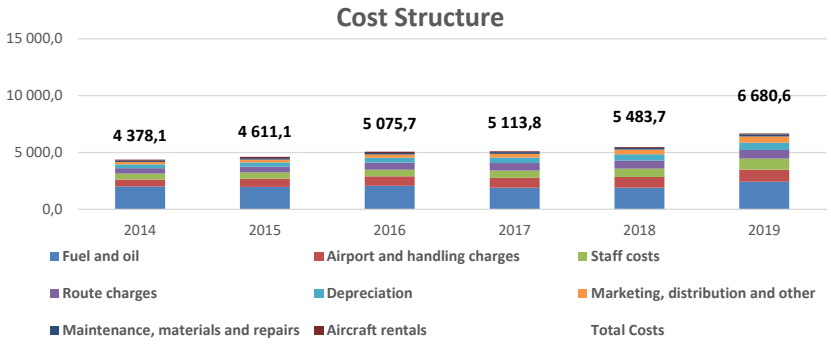

Exhibit 26: Ryanair Cost Structure Over Time
Source: Annual Reports

Forecast Income Statement

Revenues

Demand

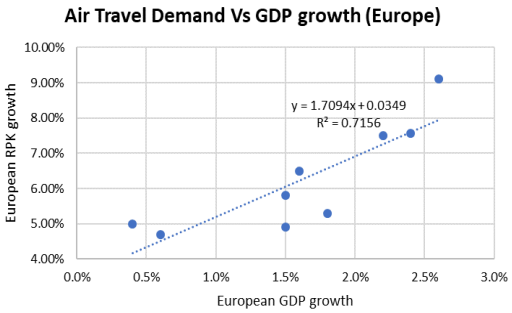

Exhibit 27: Regression of European RPK growth explained by European GDP Growth
Source: International Monetary Fund

Given that 90% of Ryanair's revenues come from operations in Europe and that Ryanair still wants to expand further in these region, our research run a regression to assess the correlation between European GDP growth and the European air traffic demand (RPK) (see *Exhibit 27*) that in fact resulted into a positive and strong correlation (R-square=72%).

RPK= 0.0349+ 1.709*European GDP growth

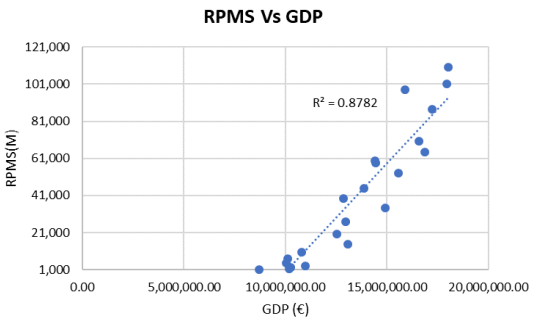

Exhibit 28: Regression of Ryanair's RPMS explained by GDP of countries where Ryanair operates
Source: International Monetary Fund

Air traffic demand expanded at a 1.71x European GDP multiplier since 2011 and for the upcoming years our research team expects a year on year increase of 6% CAGR by taking into account the GDP growth in Europe predicted by the International Monetary Fund (IMF).

We went further in our analysis and we assessed the relationship between the Ryanair's demand (RPMS) and the economic growth (GDP) of the countries where Ryanair operates in today's times. What we found was that actually both variables (RPMS and GDP of those countries) are also positively correlated but present an even higher R-square of 88% (see *Exhibit 28*).

In this sense, we accounted to the R-square of both regressions and we decided to apply the forecast to the GDP of the countries where Ryanair operates to set its future demand. This resulted in a CAGR to RPMS of 3.5% from 2020 to 2029 (see *Exhibit 29*).

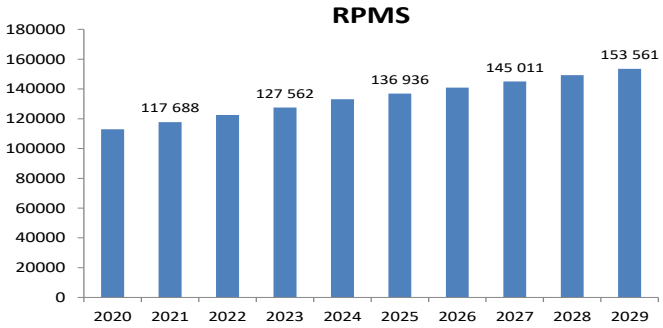

Exhibit 29: Ryanair's Revenues Per Miles Seats
Source: Annual Report

Revenues decomposition

Total revenues are comprised by schedule revenues and ancillary revenues. Ancillary revenues account to close 32% of total operating revenues and are related to extra services on top of air passenger transportation such as non-flight schedule services, excess baggage and priority seats, internet-related services and commercialization of food, beverage and merchandise, which have increased in greatest extent after the launch of Ryanair's App. In turn, schedule revenues are directly related with the sale of tickets and account to the remaining 68% of total revenues (see *Exhibit 30*).

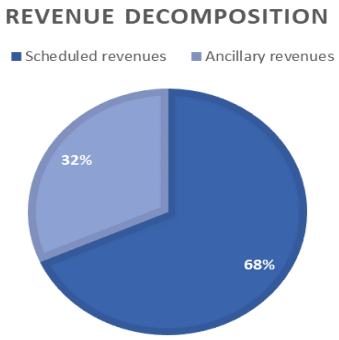

Exhibit 30: Ryanair's Revenues Decomposition
Source: Annual Report & Analysts Estimates

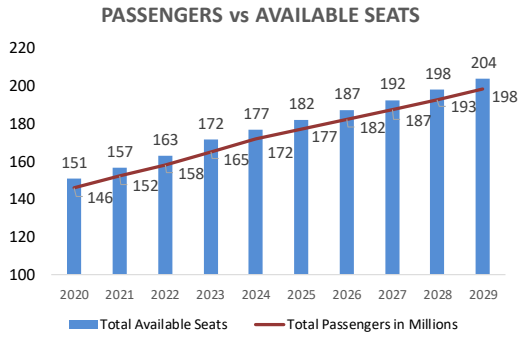

Exhibit 31: Ryanair's number of passengers and available seats
Source: Annual Report & Analysts Estimates

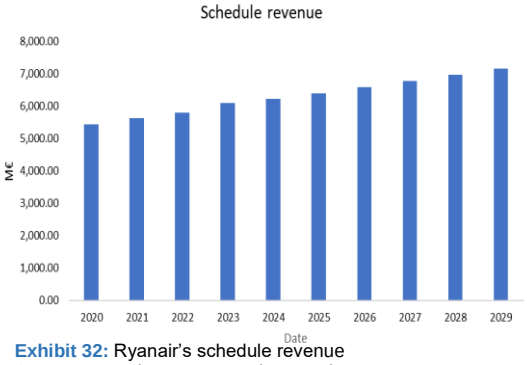

Exhibit 32: Ryanair's schedule revenue
Source: Annual Report & Analysts Estimates

Schedule revenues

Schedule revenues were computed by applying the following formula:

Schedule revenue= Average fare per booked passengers* Number of passengers

To come up with the number of passengers carried our research team needed to compute the available seats by taking into account: the number of aircrafts, seats per aircraft and Ryanair's load factor. We considered the number of aircrafts to be the ones expressed within contracts that Ryanair's have established with Boeing in advance until 2024, resulting in a CAGR of 2.98% of the number of aircrafts. The available seats of the airline are therefore the product of seats per aircraft by the number of aircrafts.

Then, by taking into account fleet growth as well as the average number of passenger's flights sector flown per aircraft, the supply in the year is the product between available seats and sectors flown per aircraft.

Due to the arrival of the new Boeing 737-MAX-200 and substantial orders negotiated by Ryanair with Boeing until 2024, available seats are expected to grow with a CAGR of 3.2% from 2020 to 2024 (*see Exhibit 31*).

After 2024, we used a different approach since there are no predictions of aircraft orders by that time in the future, therefore our research team estimated the number of aircrafts needed into the fleet based on the demand. Hence, between 2025 until 2029 the number of passengers will grow at a cumulative annual growth rate of 2.3% (*see Exhibit 31*) and higher load factor of 97%. All aircraft come as a result (see later in *Forecast BS*).

Additionally, Ryanair estimated an increase in the number of passengers of around 41% from 2019 to 2024. However, our approach is more conservative showing a 20% growth of passengers flying with Ryanair and associated increase in scheduled revenues by an average annual growth of 4.03% (*see Exhibit 32*).

Load Factor

Ryanair load factor rose in the last 5 years showing a positive evolution of companies demand and efficiency (*see Exhibit 33*).

We estimated load factor through the use of two different methodologies: on the one hand, from 2019 until 2024, the load factor depends exclusively on the annual demand of Ryanair's flights (RPMS) as well as on its supply. Remember that demand grows with the GDP growth of countries where

Ryanair operates whereas supply comes from the aircrafts ordered in the Boeing contract of 2014 already agreed between Ryanair and Boeing.

On the other hand, from 2025 onwards the load factor was set equal to the load factor between 2020 and 2024 which is 97%. We believe that the 97% load factor is a reasonable value to the long-term, because the underlying assumption that grounds our model is that Ryanair will be able to be more efficient than it is in the current days (load factor 96% FY19) after the arrival of the new Boeing 737-MAX-200 and moreover in an attempt to overcome capacity constraint issues in airports by fully fill its aircrafts with passengers. If anything changes with other competitors' load factors, Ryanair will be still the most efficient airline in the upcoming years. Historical Ryanair's performance also supports our grounding because Ryanair has prevailed with incremental changes of 1 percentage points on its load factor during the last 3 years (as we can see in Exhibit 33).

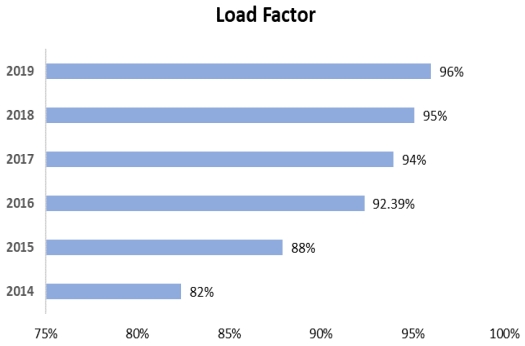

Exhibit 33: Ryanair's load factor in the last 5 years
Source: Annual Report & Analysts Estimates

Average Fare

Concerning Ryanair's average fare, this is a product of demand for flights and the total available seats. In order to address high levels of demand, seats are priced in a way to ensure that high load factors are in fact achieved. In Ryanair's own words Ryanair's fares are established by the "load factor active-yield passive" policy. What this policy means is that, average fares have an inverse relation with regards to the load factor. The higher the load factor reached, the lower is going to be the average fare.

The negative correlation if it is to remain over the next years, due to resulting high load factor computed of 97% between 2020 and 2029, averages fares will be necessarily competitive (*see Exhibit 34*).

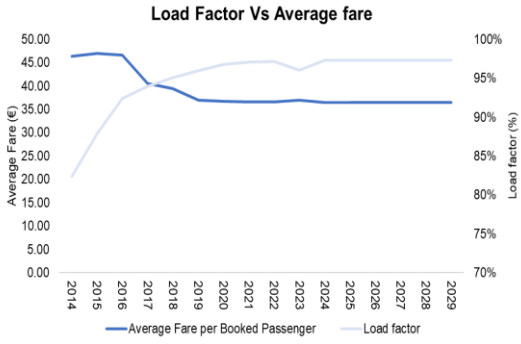

Exhibit 34: Ryanair's load factor vs average fare
Source: Annual Report & Analysts Estimates

An additional study that our research team went through was to understand Ryanair's elasticity of demand. We analysed averages fares and the demand in the last 21 years, the period corresponding to 1998-2019. Our findings suggest that Ryanair has an elastic demand (once the slope of the regression is not steep, slope= -0.0891). In other words, any moderate change in average prices has a huge impact on the demand for a certain flight. Therefore, if Ryanair is to increase its average fare it has to be careful once the outcome on demand is by all means higher (demand contracts significantly) (*see in Exhibit 35*).

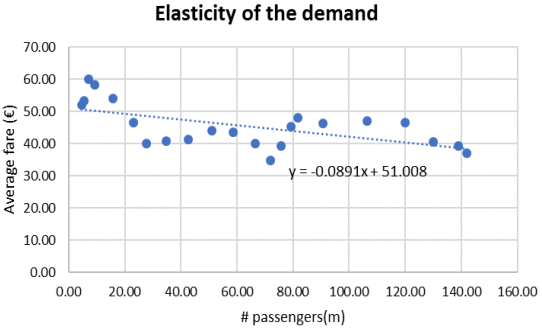

Exhibit 35: Ryanair's demand elasticity from 1998-2019
Source: Annual Report & Analysts Estimates

Subsequent to Ryanair's elasticity of demand is its non-fuel surcharges policy in which any costs arising from fluctuations in fuel prices cannot be passed away through averages scheduled fares. By applying such policy, the airline prevents itself of chasing away demand for flights. Rather than that, what

Ryanair does is to shift those costs to the price of ancillary services, exactly as we noticed during the last 5 years (*see in Exhibit 36*).

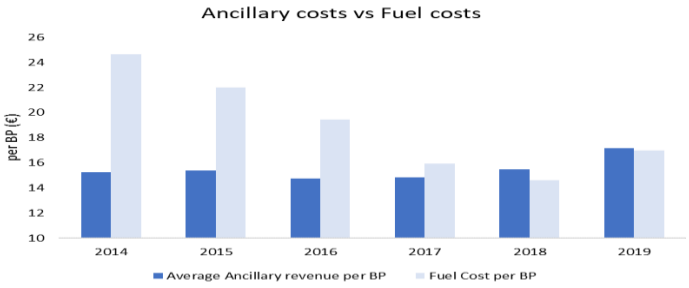

Exhibit 36: Ryanair's ancillary revenue per BP vs Fuel costs per BP
Source: Annual Report & Analysts Estimates

Ancillary revenues

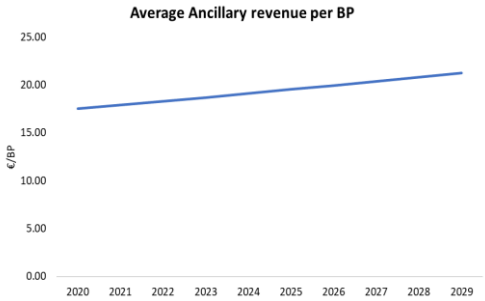

Exhibit 37: Ryanair's ancillary revenuer per BP
Source: Annual Report & Analysts Estimates

The company has developed multiple ancillary services, for instance by offering accommodation, travel insurance as well as a service of rent-a-car available on its website and through CarTrawler. The average ancillary revenues per booked passenger have been increasing for the last 3 years from 14.74€ in 2016 to 17.15€ in 2019. Therefore, the average ancillary revenue per booked passenger is adjusted by inflationary moves in the upcoming years until 2029, presenting an average annual growth of 2% passing from 17.49€ in 2020 to 21.23€ in 2029 (*see Exhibit 37*).

Operating Expenses

Fuel costs

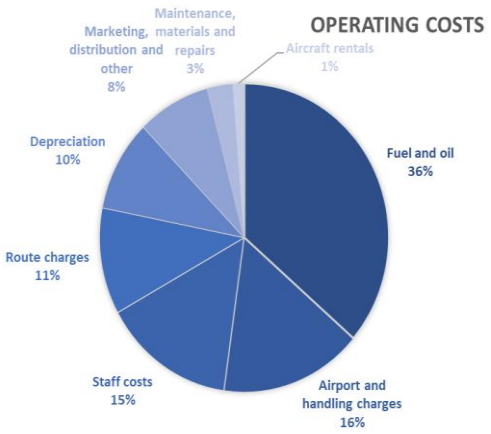

Exhibit 38: Ryanair's operating costs weights
Source: Annual Report & Analysts Estimates

As mentioned before, fuel costs have the largest share of Ryanair's total operating costs (*see in Exhibit 38*) and that is the main reason on the back of its hedging strategy against price fluctuation arising from jet fuel and against FX risk once crude oil is priced in US dollars. In order to do so, Ryanair usually signs forward contracts/hedging arrangements that in the specific case of jet fuel contracts, usually cover periods of up to 18 months of anticipated jet fuel requirements. By entering into forward jet fuel contracts Ryanair is covered by 90% FY20, which is equivalent to 709$ per metric ton and in 2021 it is already covered by 37% of its estimated costs at prices equivalent to 632$ per metric ton. In this sense, Ryanair can avoid transferring jet fuel price fluctuations through average fares to customers.

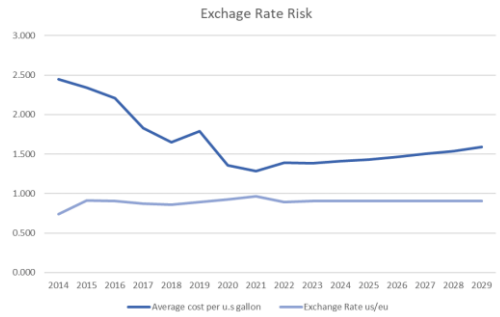

Exhibit 39: Exchange Rate Risk associate with fuel
Source: Annual Report, EIA & Analysts Estimates

Considering all the factors that may drive fuel costs changes such as exchange rate risk, a disruption in supply, a sudden increase in demand or even market speculation our research team estimated those costs based on the forecast of the average cost per U.S gallon according to U.S Energy Administration Information (EIA). The unit cost was initially expressed in $/MMBtu, therefore we had to convert into $/gallon. After that we also took into account the impact of the FX risk, by converting the forecast from U.S. Dollars into Euros (*see Exhibit 39*) and any increase in prices arising from inflation over time to come up with final unit cost to jet fuel.

In order to calculate total fuel costs, we considered the average fuel consumption per seat into the analysis and finally we applied the next formula:

Fuel and oil costs= Average consumption per seat* Average cost per gallon*Available seats

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Air travel Fuel Costs ($/MMBTU)	9.01	8.87	8.79	8.93	9.07	9.21	9.41	9.68	9.88	10.24
Costs per $/gallon	1.24	1.22	1.21	1.23	1.25	1.27	1.30	1.34	1.36	1.41
Exchange Rate $/l	0.93	0.97	0.89	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Inflation	2.0%	2.2%	2.2%	2.3%	2.3%	2.1%	2.1%	2.1%	2.1%	2.1%

Conversions (EIA)	
1bbl	5,800,000 Btu
1bbl	42 ggl
1 MMBtu	1,000,000 Btu

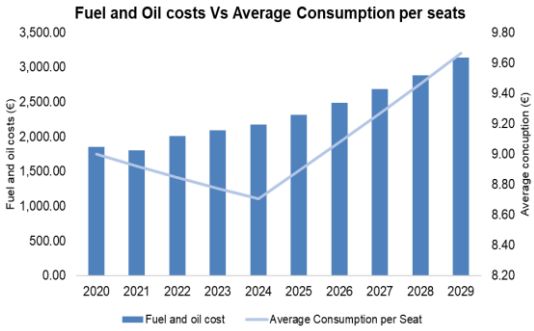

Exhibit 40: Fuel costs and average fuel consumption evolution
Source: Annual Report, EIA & Analysts Estimates

The average consumption per seat is foreseen to decrease from 2020 onwards due to the arrival of the new Boeing 737-MAX-200. This aircraft despite being larger with 4% more seats compared to the previous Boeing 737-800, it provides lower jet fuel consumption per seat of 16% in the next 5 years which is translated into a CAGR of 3.24%, from 2020-2024 and 6.28% from 2025 onwards.

Therefore, in our model during the first years of our forecast jet fuel prices are expected to decrease up to a certain point in time in which this trend inverts and the cost per gallon increases. The increase of the routes networks also leads to higher fuel costs over time (*see Exhibit 40*).

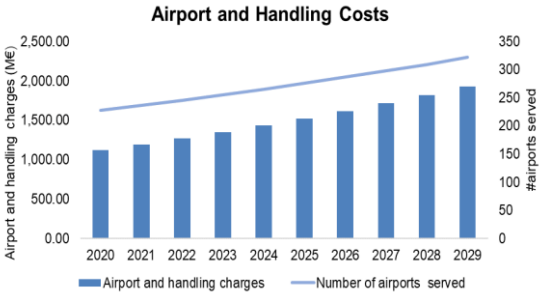

Exhibit 41: Ryanair's airport and handling charges evolution
Source: Annual Report& Analysts Estimates

Airport and handling charges

The Airport and handling charges importance to overall cost structure has been increasing, with a weight of between 18%-19% of the total operating costs of the company. Therefore, we estimated an average annual growth rate of 6% from 2020 to 2029, based in the estimated number of airports served by the airline, which is expected to increase due to new routes on its network and aligned with Ryanair's expansion strategy (*see Exhibit 41*),

representing from 2020 onwards approximately 21% of the total operating costs of the company (see *Exhibit 42*)

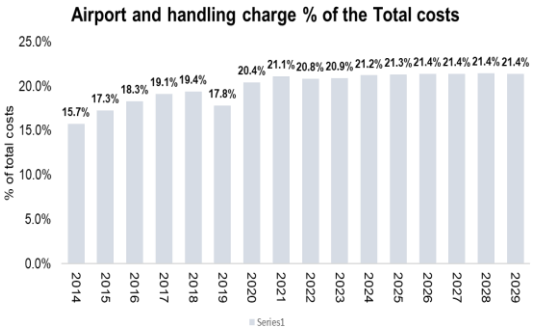

Exhibit 42: Ryanair's airport and handling charges as % of operating costs
Source: Annual Report& Analysts Estimates

Ryanair seeks to operate in airports that can offer lower airport and handling charges and that have more available slots. The airline successful performance overtime measured by its air passenger traffic growth in many European airports created a competitive advantage that many of its peers lack of and that allows the airline to negotiate better conditions on its contracts despite fierce competition by limited slots.

In addition, the company has chosen towards less expensive gate location as well as outdoor boarding stairs so that it can save on airport charges. Moreover, there was an increase of handling charges that resulted from the rise in the number of passengers flying with the airline. To address this issue, right now Ryanair requires all passengers to check-in in advance, on the internet, reducing the waiting time in airports and adding the option of paying bags on top of the average fare with the aim of reducing the number of bags carried by passengers.

Staff costs

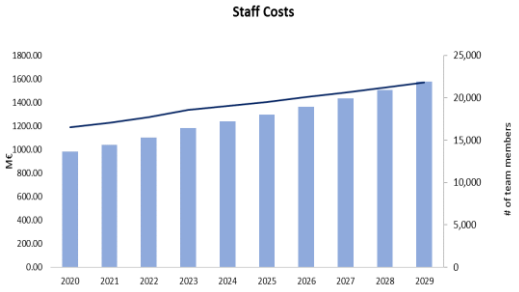

Exhibit 43: Ryanair's Staff costs and team members
Source: Annual Report& Analysts Estimates

Staff costs are estimated according to the number of workers per aircraft. However, since some of Ryanair's aircrafts were grounded and new aircrafts deliveries were delayed, the company incurred in a reduction of staff members of merely 0.09% between 2019 in 2020. Nevertheless, for the upcoming years we assumed that the situation is normalized and therefore personnel costs will increase on average 5% per year once Ryanair's will increase its fleet due to the expected rise in air traffic demand (*see Exhibit 43*).

Route charges

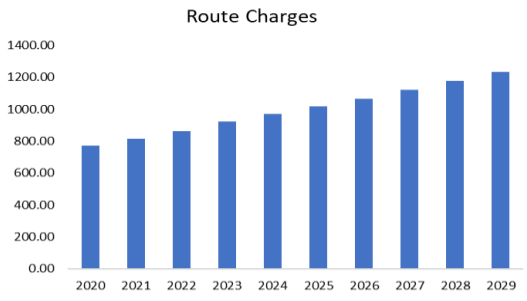

Exhibit 44: Ryanair's Route charges
Source: Annual Report & Analysts Estimates

Recently, there has been a rise in route charges coming from the expansion of sectors flown. Our research team estimated these costs based on the evolution of total miles flown per year as well as on the average length which translates into average miles travelled by passengers carried by Ryanair predicted to remain at 774 from 2020 onwards.

Total miles flown by Ryanair are then the product of the average length by total sectors' flown. The result was an increase in route charges of around 5% annually (*see Exhibit 44*).

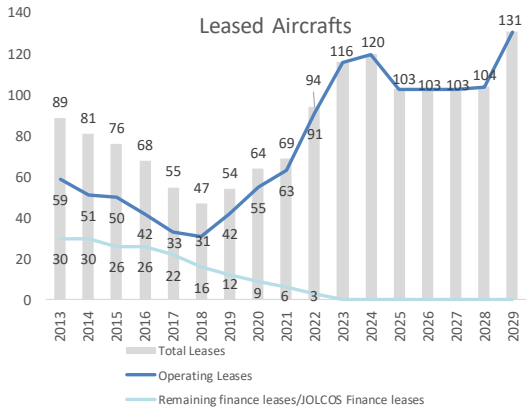

Exhibit 45: Ryanair's Aircraft Rental costs
Source: Annual Report & Analysts Estimates

Aircraft Rentals

Ryanair' aircraft can be financed by two different leasing contracts: finance leases and operating leases. Operating leases are directly charged to the income statement in this caption whereas finance leases are only charged to the income statement by its interest rate part while its reimbursements are accounted in the balance sheet. Therefore, predictions of aircrafts rentals were computed by considering the aircraft rentals per leased aircrafts and are increasing with total number of leased aircrafts. (*see Exhibit 45*). Considering this, aircraft rentals costs per leased aircrafts that Ryanair has per year, leads to an annual growth of 2.18% from 2020 to 2029 (*see Exhibit 46*).

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
#I leased aircraft	54	64	69	94	116	120	103	104	105	106
Aircraft rentals per leased aircra	1.82	1.86	1.90	1.95	1.99	2.03	2.08	2.12	2.16	2.21

Exhibit 46: Ryanair's Aircraft rentals costs per leased aircrafts
Source: Annual Report& Analysts Estimates

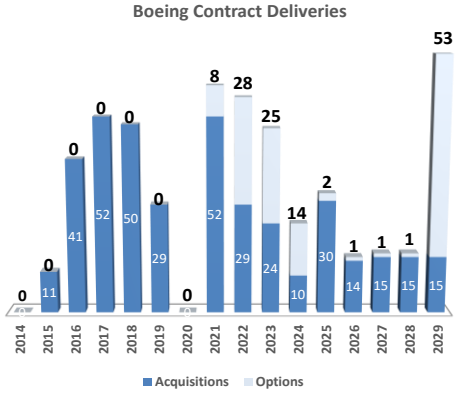

Exhibit 47: Boeing contracts deliveries
Source: Annual Report & Analysts Estimates

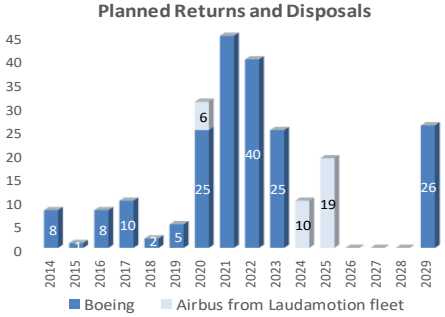

Exhibit 48: Aircraft returns and disposals
Source: Annual Report & Analysts Estimates

Forecast Balance Sheet

Property, Plant and Equipment

There are several elements included in Ryanair's property, plan and equipment weighting very differently to the overall value of the caption PPE: Aircrafts (98.7% FY19), Hangar and Buildings (0.58%), Plant and Equipment (0.55%), Fixtures and Fitting (0.16%) and Motor Vehicles (close to 0,0%).

Aircrafts are indeed the most significant part of PPE not only due to the high price paid by Ryanair per aircraft (close to 81.4 US dollars to Boeing 737-800) but also due to past investments incurred by Ryanair on its fleet growth as well as future projections of further increases in the number of aircrafts (*see Exhibit 47*).

In the end of FY19, Ryanair had a fleet of 471 aircrafts which included 455 Boeing 747-800 and 16 airbus A320. Ryanair has agreed upon a new Boeing contract, the so-called "*2014 Boeing Contract*" in which it expects to acquire 135 Boeings aircrafts and additional 75 orders with options (under leasing agreements).

From 2020 until 2024 Boeing aircrafts acquisitions (see *Exhibit 47*) are according to the "2014 Boeing Contract". With respect to returns and disposals of aircrafts in the same period, these were obtained in order to reach Ryanair future expected load factor of 97%.

Once there is no contract pre-negotiated to the period after 2024, all Boeing 737-Max-200 expected to arrive in that period as well as returns and disposals of the old model Boeing 737-800 are a result of the demand by Ryanair's flights as well as a product of its expected load factor (*see Exhibit 48*).

In year 2019, a new aircraft from another supplier - Airbus - entered into Ryanair's fleet, Airbus A320 (*see Exhibit 49*). A320 are aircrafts coming from Laudamotion, after Ryanair's acquisition of the airline. A320 are leasing contracts with 5 years maturity. Our research team supports the view that those Airbus are an opportunity to Ryanair to supply from a difference source in years of reasonable uncertainty related to the FAA and EASA future authorization to the return to service of Boeing 737. In this sense, our assumption is that Airbus aircraft will remain on Ryanair's fleet during the 5 contractual years.

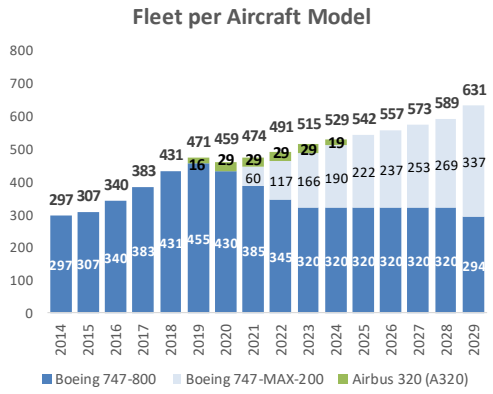

Exhibit 49: Fleet per Aircraft Model
Source: Annual Report & Analysts Estimates

Regarding hangar and buildings, these were projected to follow the evolution of site and floor area per aircraft. This caption is indeed the one which reflects better overcapacity in European airports. Therefore, site and floor area are predicted to decrease by 3.26%. Notice the following, even though area per aircraft is contracting, overall hangar and buildings increase from 2021 until 2023 due to high fleet growth. Hangar and buildings still have to accommodate fleet expansion (*see Exhibit 50*).

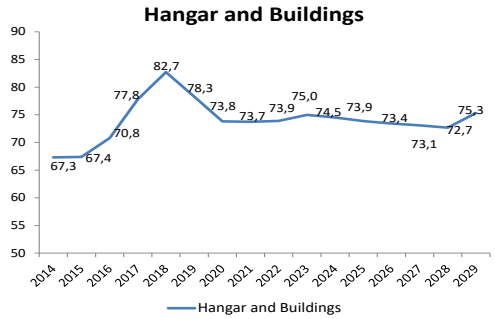

Exhibit 50: Hangar and buildings
Source: Annual Report & Analysts Estimates

Plant and Equipment, Fixtures and Fittings as well as Motor Vehicles are weightless to the total value of PPE.

PPE Financing Method

Aircrafts will be financed in different ways in the upcoming years. Up until the moment, aircrafts financed through bank loans have reduced over time (on average less 13 aircrafts/7.3% yearly reduction up to FY19) - impacting the value of debt outstanding which consequently also decreases. Our research team expects the same reduction to happen in the upcoming year which means that debt will be repaid along the years

Fleet Share	Ex-IM Bank Financing	JOLCOS - Finance Leases
2014	70,7%	10,1%
2015	65,8%	8,5%
2016	57,1%	7,6%
2017	45,4%	5,7%
2018	35,5%	3,7%
2019	30,6%	2,5%

Exhibit 51: Ryanair' fleet share by EX-IM Bank and Jolcos financing
Source: Annual Report& Analysts Estimates

Aircrafts financed through JOLCOS, finance leases, have decreased as long as call options are exercised. The exercise of these options also means a reduction in the value of debt outstating likewise bank loans (*see Exhibit 51*). Our research team also expects lessen JOLCOS financed aircrafts in the future once remaining 12 JOLCOS will have to be exercised within period of 10.5 years.

Fleet Share	Operating Leases	Own resources
2014	17,2%	0,0%
2015	16,3%	3,6%
2016	12,4%	15,3%
2017	8,6%	27,2%
2018	7,2%	35,7%
2019	8,9%	38,9%

Exhibit 52: Ryanair' fleet share by own resources and operating leases
Source: Annual Report& Analysts Estimates

Aircrafts financed by Ryanair's own resources - through debt issuance or equity - have increased their share on Ryanair's total fleet (*see Exhibit 52*). Our model assumes that all future aircrafts projected into the 2014 Boeing contract and further acquisitions will be financed by a mix of debt issuance and equity. Debt issuance is the most recent financing method used by Ryanair since 2014 (*see Exhibit 53*). Ryanair started doing so because on the hand debt capital markets have had attractive bond yields since 2009 and on the other hand because debt capital markets do not have the same amount of restrictions than the debt borrowed from a bank.

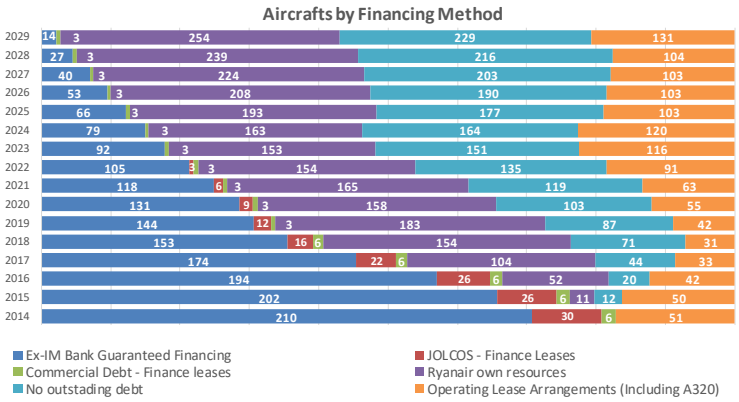

Exhibit 53: Ryanair' aircrafts by financing method evolution
Source: Annual Report & Analysts Estimates

Debt

The value of total debt is split into finance leases obligations and long-term debt. The caption "finance lease obligations" within debt regards to the present value of all future lease obligations associated to the 13-year Euro-denominated JOLCOS used to finance part of Ryanair's fleet as well as the present value of future payments that belong to the commercial debt contracts. The way that our research team estimated future repayments and consequently the evolution of the finance lease caption was by looking to the amount of repayments made by Ryanair year by year taking also into account the aircrafts in the fleet which had still debt outstanding. As long as debt from finance lease contracts is repaid the caption "finance lease" decreases, until the moment in which all aircraft under JOLCOS and commercial debt contracts have been totally paid back.

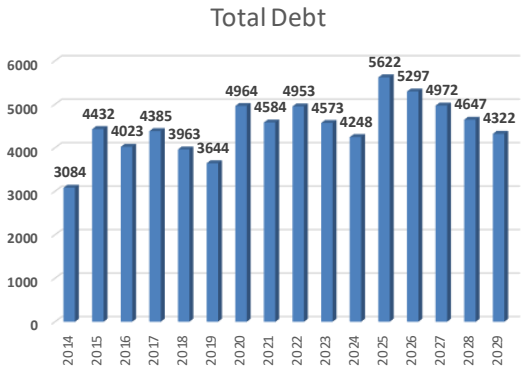

Exhibit 54: Ryanair Total Debt Evolution
Source: Annual Report & Analysts Estimates

A similar approach was implemented to forecast the caption "long-term debt" in our forecast, .This caption concerns to the present value of future obligations related to aircrafts through financed by loans such as the ones provided by the Export-Import Bank of the United States and in addiction

Ryanair Credit Rating	S&P	Moody's
Long-Term	BBB+	BBB+
Outlook	Stable	Stable
2014 Bond	BBB+	BBB+
2015 Bond	BBB+	BBB+
2017 Bond	BBB+	BBB+

Exhibit 55: Ryanair Credit Rating
Source: Ryanair Official Website

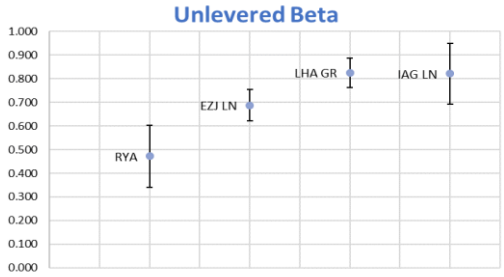

Exhibit 56: European Airlines Unlevered Betas
Source: Bloomberg & Analysts Estimates

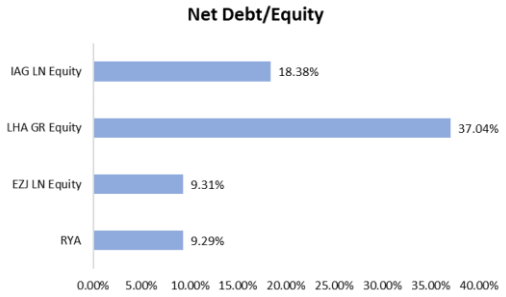

Exhibit 57: European Airlines D/E ratio
Source: Bloomberg

relative to three Eurobonds issued in debt capital markets. What our research expects is that this caption will evolve by decreasing as long as aircrafts are repaid back to the financial institution (Ex-IM US Bank) and or to Eurobond holders. The opposite happens if Ryanair is going to raise additional funds through debt issuance (see *Exhibit 54*).

In past years due to lower bond yields in debt capital markets after 2009 Ryanair opted by raising funds to invest in its fleet expansion through debt issuance. The low bond yields environment remains and therefore we believe that Ryanair will keep the same rational for the upcoming years by raising additional funds through more debt issuance. Moreover, looking to the credit rating of Ryanair (see *Exhibit 55*) versus its peers, Ryanair has the highest credit rating which makes the Irish airline a very attractive investment to any investor that aims diversify its portfolio towards the airline sector.

Valuation

Cost of Equity

The cost of equity was computed through CAPM model and the inputs of the analysis are market risk premium, the risk-free rate and beta levered.

The market risk premium was based on a proxy to the market return, annualized 11-year MSCI World index of 7.41% and on a risk-free rate, the 10-year German Government Bond yields, given that our forecast has a 10-years horizon until perpetuity and German bonds are also denominated in Euros, the same currency of Ryanair's cash-flows. Therefore, our best proxy to the Re is 6.06% given a risk free of 1.45%, a market return of 7.41%, and market risk premium of 5.96%.

The equity beta of Ryanair was estimated through the regression between the excess stock return (variable y) and the excess market return (variable x). We used monthly returns to the last 11 years (2008-2019), resulting in a statistically significant beta of 0.51, with 95% confidence interval that ranges between [0.192;0.825].

Beta unlevered of the industry was estimated by using Ryanair European comparable airlines, as we believe that they share the same risk level (*see Exhibit 56)* not only in geographic means, since they all operate in Europe and have a large extent of their revenues coming from there but also because they present a similar cost structure (given by their net debt to equity ratio) (*see Exhibit 57).*The companies considered were then, the LCC Easy Jet and other European legacy carriers Lufthansa Group and IAG

Holdings plc. All airlines mentioned likewise Ryanair belong to the top 10 airlines with the highest number of passengers.

	Bu
Rynair	0.47
Easy Jet	0.69
Lufthansa	0.82
IAG Holdings	0.82
Average	0.70

Exhibit 58: Average Industry Beta
Source: Bloomberg

The unlevered beta computed from the industry average resulted in a value of 0.70 (*see Exhibit 58*) that was re-levered afterwards ending up at 0.77 (inside the confidence interval). Given Ryanair's net debt to equity ratio of 9.29%, the already mentioned cost of equity obtained was 6.06%.

A sensitivity analysis to the beta was performed and this analysis is going to be detailed later on.

Cost of debt

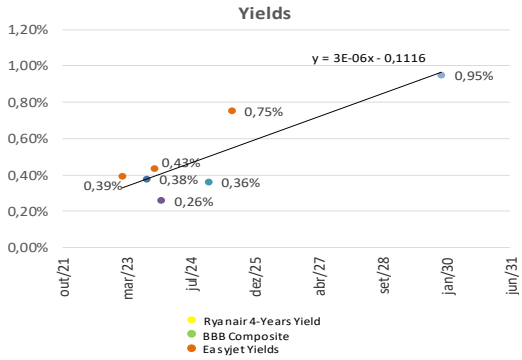

Exhibit 59: European Composite BBB Yields, EasyJet Bond Yields and Ryanair Bond Yields
Source: Bloomberg

In order to calculate Ryanair's cost of debt, we had to come up with a value for a 10-years yield to Ryanair (corresponding to the period of our forecast which is also 10 years long). Ryanair only has bonds with shorter maturities traded in the market, therefore in order to reach a reasonable value for a bond with a maturity of 10 years, we estimated a regression with yields from Ryanair and from EasyJet that also have the same credit rating (BBB+). In addition to these yields, we added the European Composite BBB. From the regression, the 10-years yield obtained was 1.05%. By considering THE correspondent recovery rate (53.90%) and annual probability of default (0.21%), retrieved from Moody's, we obtain the final value to the cost of debt which is 0.95% (*see Exhibit 59*)

Discounted Cash Flow Method (DCF)

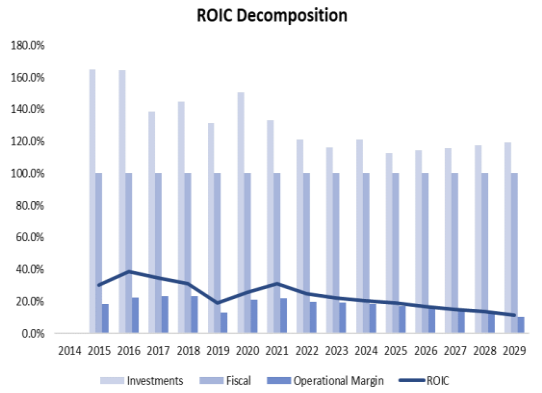

Exhibit 60: ROIC
Source: Analysts estimates

The intrinsic valuation model was based on the Discounted Cash Flow Method, by discounting future unlevered FCF by the WACC which is the discount rate that represents Ryanair's risk according to its capital structure. The resulting WACC was of 5.62%.

The time horizon of our forecast was established according to the period of stabilization of unlevered FCFs. From 2020 to 2025 our growth rate of cash flows was higher due to huge investment rates arising from expected aircraft orders. However, from 2026 onwards both ROIC and the reinvestment rate decrease because there are fewer aircraft orders and part of fleet is returned or disposed. Hence, during this period (2026-2029) the growth rate of cash

flow starts to stabilize, reaching a steady state of 2%, which seems reasonable since it is lower than the European nominal GDP of 3.63%[28] .

The return on capital invested (ROIC) of 12% (*see Exhibit 60*) is higher than the cost of capital (WACC) of 5.62%, therefore in our model Ryanair keeps creating value in the future.

Enterprise Value, Equity Value and Target Price

Considering, a WACC of 5.62% and a long-term growth rate of 2%, the terminal value computed was 15,965€ in the FY29. Ryanair reached in FY2020 an Enterprise value of 22 493.37€ adding up to the non-core invested capital of 1480.90€. (*see Exhibit 61*)

We estimate a target price of 16.77 € in FY2020, with an expected capital gain of 14.9%, and dividend yield to shareholders of 3% resulting in an expected return of 17.9%. This expected return leads our research team to recommend investors to **BUY** Ryanair's shares.

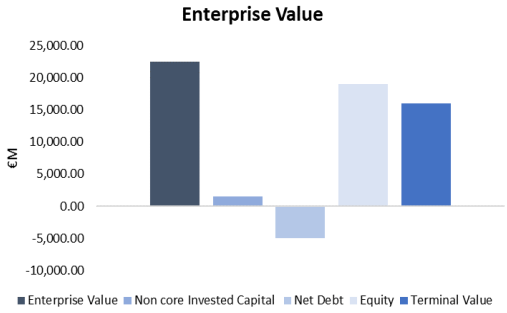

Exhibit 61: Enterprise Value, Equity Value, Terminal Value, Non-core invested capital and Net Debt
Source: Analysts estimates

Multiples

Ryanair's share price was assessed through, relative valuation by using as multiples the EV/EBIT, EV/EBITDA and P/E. The criteria for the selection of the companies were the return on invested capital, sustainable growth rate as well as similar capital structures measured by their net debt to equity ratio. In this sense, peer companies chosen were Lufthansa (ROIC 5%, Growth rate 2% and Net debt to Equity of 37%), EasyJet (ROIC 8%, Growth rate 6% and Net debt to equity of 9%), as well as US companies such as Southwest Airline (ROIC 17%, Growth rate 21% and Net debt to equity of 4%) and finally JetBlue (ROIC 9%, Growth rate 13% and Net debt to equity of17%). All of these airlines are compared to Ryanair which is presently traded with a ROIC of 9%, sustainable growth rate of 2% and a value of net debt to equity of 9%.

The median multiples obtained from the above-mentioned comparable airlines to EV/EBIT, EV/EBITDA and P/E are 9.9x, 5.4x, and 11.2x respectively. Ryanair's own multiples computed from DCF valuation are EV/EBIT 13.4 x, P/E 13.0x, and EV/EBITDA 9.8x. All multiples from Ryanair's DCF are above the median industry target and our research team believes that this may be happening due to Ryanair's successful historical performance which has been above the industry average as well as due to our team expectations of Ryanair's future growth. Underlying share prices obtained from multiples of

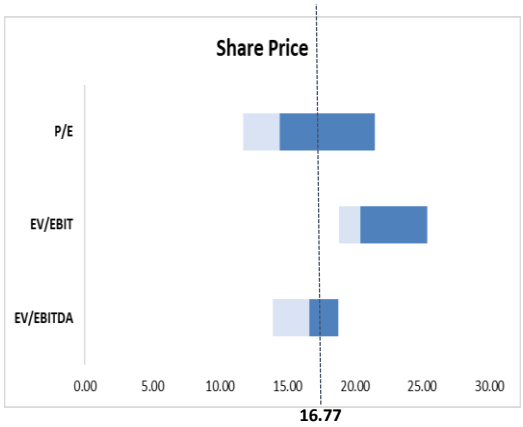

Exhibit 62: Share Price Football Field
Source: Analyst estimates

[28] International Monetary Fund

the peer group are 7.87€ to EV/EBITDA ratio, 11.66€ to EV/EBIT and finally 14.44€ to P/E ratio. These values are in fact significantly below Ryanair's price target obtained in the main valuation of 16.77€ (*see Exhibit 62*).

These results show to our team that in fact due to current fierce environment in the European airline sector, many of Ryanair's peers have been traded at lower multiples. However, Ryanair is an outlier hence in present days it has presented above the industry multiples, translating investors' high expectation about Ryanair's future performance and growth prospective.

Our team also compared Ryanair's multiples from the DCF model with those extracted from Bloomberg (EV/EBITDA 9.6X, EV/EBIT 16.3X and P/E 18.0). In fact, Bloomberg multiples are even higher than those from our valuation which may indicate that our team DCF model valuation is reasonable.

Sensitivity Analysis

Some irresolutions arise when our research team computed Ryanair's WACC, more precisely at the level of beta levered and to estimate Long-term Growth of the perpetuity period. In this sense, our aim is to understand how sensitive the share price is to changes in WACC – by taking into account a different beta levered – and changes in the Long-term Growth Rate.

Beta levered included to the sensitive analysis were: the lower-limit and upper-limit [0.19;0.82] of beta levered confidence interval, the beta equity which directly comes from Ryanair's regression between its excess of stocks and the market risk premium (0.51, in fact this beta does not account to other comparable airlines beta) and finally the resulting beta levered based on the median of comparable airlines (0.83) instead of the average used in the main valuation. Analysing the cost of equity obtained from each beta levered, results are aligned, with exceptions of 2.60% cost of equity (Re) coming from the lower-limit confidence interval of beta levered (0.19) and the 4.48% cost of equity (Re) from the coefficient of Ryanair's regression (0.51).

WACCs included in the sensitivity were obtained by considering the same Cost of debt (Rd) (0.95%) and D/E ratio (9.29%), but different Re provided by the sensitivity analysis above mentioned. Therefore, to both deviations of Re (2.60% and 4.48%) previously stated, the WACC decreases by 3.17% and 1.45%, resulting in a merely 2.45% and 4.17% WACC (see *Exhibit 63*).

Then, by taking several WACCs into the analysis and adding a sensitivity also to the Long-term Growth rate by varying -/+1% the main valuation steady growth rate of 2.18% and also considering the nominal GDP Growth of

Beta	Re	WACC
0.77	6.06%	5.62%
0.19	2.60%	2.45%
0.51	4.48%	4.17%
0.77	6.06%	5.62%
0.82	6.36%	5.89%
0.83	6.41%	5.93%

Exhibit 63: Cost of Equity and WACC sensitivity analysis
Source: Analysts estimates

		g		
16.77	1.18%	2.18%	3.18%	3.63%
2.45%	53.61	246.73	-83.46	-50.81
4.17%	21.27	30.69	59.20	106.29
WACC 5.62%	13.49	16.77	22.75	27.38
5.89%	12.55	15.35	20.22	23.80
5.93%	12.42	15.16	19.89	23.35

Exhibit 64: Long-term growth and WACC sensitivity analysis
Source: Analysts estimates

Europe (3.63%) as a possible alternative to the long-term growth rate, we estimated resulting share prices.

To the value of WACC of 2.45% and with Long-term Growth rates higher than 2.18% the analysis completely loses its meaning given that we have a cost of capital (WACC) which is higher than ROIC. In other words, Ryanair is destroying value over time, ending up with negative share prices.

In general, to the lowest values of WACC (2.45% and 4.17%) and the lowest Long-term Growth rates (1.18% and 2.18%) the share price was abnormally high.

Reasonable share prices results were attained to WACCs close to 6% and a Long-term Growth up to 2%, leading to a price decrease between 35% to 9%, turning the price recommendation to be 'Sell'. Whereas in the case of WACCs still close to 6% but with Long-term Growth rates beyond 2%, share prices increase by 15% to 39%, inciting a 'Buy' recommendation (see *Exhibit 64*).

Appendix

Financial Statements

Income Statement Forecast													
€M	2017	2018	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F
Core													
Revenues	6,648	7,151	7,697	7,912	8,284	8,685	9,176	9,567	9,916	10,279	10,657	11,049	11,458
Scheduled revenues	4,868	5,134	5,261	5,360	5,566	5,794	6,097	6,280	6,463	6,650	6,844	7,043	7,247
Ancillary revenues	1,780	2,017	2,436	2,552	2,718	2,892	3,080	3,287	3,454	3,629	3,813	4,007	4,210
COGS													
Fuel and oil	-1,913	-1,903	-2,427	-1,855	-1,806	-2,009	-2,095	-2,175	-2,317	-2,488	-2,688	-2,883	-3,141
Airport and handling charges	-865	-939	-1,062	-1,125	-1,195	-1,269	-1,349	-1,435	-1,522	-1,616	-1,714	-1,819	-1,931
Staff costs	-633	-739	-984	-985	-1,039	-1,100	-1,181	-1,241	-1,299	-1,364	-1,432	-1,504	-1,577
Route charges	-656	-702	-745	-777	-820	-868	-932	-979	-1,025	-1,076	-1,130	-1,187	-1,244
Maintenance, materials and repairs	-141	-148	-191	-190	-200	-212	-227	-239	-250	-263	-276	-290	-304
Marketing, distribution and other	-322	-410	-547	-574	-602	-631	-667	-696	-720	-746	-774	-802	-832
EBITDAR	2,117	2,313	1,738	2,405	2,619	2,594	2,723	2,801	2,782	2,725	2,642	2,563	2,428
Aircraft rentals	-86	-82	-84	-98	-119	-131	-183	-231	-244	-214	-220	-227	-234
Depreciation	-498	-561	-641	-627	-684	-739	-790	-802	-859	-890	-924	-957	-991
EBIT	1,533	1,669	1,013	1,679	1,816	1,723	1,750	1,769	1,679	1,621	1,497	1,378	1,203
Taxes	-192	-209	-127	-210	-227	-215	-219	-221	-210	-203	-187	-172	-150
Adjustments	31	42	59	42	46	43	44	45	42	41	38	35	30
NOPLAT	1,372	1,502	946	1,512	1,635	1,551	1,576	1,592	1,511	1,459	1,348	1,241	1,083
Non Core result	0	0	-9	0	0	0	0	0	0	0	0	0	0
Financial Result	-56	-52	-52	-49	-67	-62	-67	-62	-57	-76	-72	-67	-63
Net Income	1,316	1,450	885	1,463	1,567	1,489	1,508	1,530	1,454	1,383	1,276	1,173	1,020
Total Comprehensive income	**1,838**	**869**	**1,270**	**1,463**	**1,567**	**1,489**	**1,508**	**1,530**	**1,454**	**1,383**	**1,276**	**1,173**	**1,020**

Balance Sheet Forecast													
€M	2017	2018	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F
Core													
Property, plant and equipment	7,214	8,123	9,030	8,406	9,558	10,673	11,615	11,735	12,783	13,098	13,444	13,757	14,090
Intangible assets	47	47	146	47	47	47	47	47	47	47	47	47	47
Deferred Tax	0	0	43	0	0	0	0	0	0	0	0	0	0
Derivative Financial Intruments	11	2	224	216	165	160	178	186	193	206	221	239	256
Inventories	3	4	3	2	2	2	2	2	2	2	2	2	3
Trade receivables	54	58	60	65	68	71	74	77	79	81	84	86	89
Operating Cash	133	143	154	158	166	174	184	191	198	206	213	221	229
Prepayment	221	235	237	239	241	243	245	247	250	252	254	256	258
Restricted cash	12	35	35	35	36	36	36	36	37	37	37	38	38
Derivative Financial Instruments	286	212	309	251	245	272	284	295	314	337	364	391	426
Trade payables	-294	-250	-574	-391	-402	-432	-458	-480	-506	-536	-569	-602	-640
Current Tax liabilities	-3	-36	-32	-44	-48	-45	-46	-47	-44	-43	-39	-36	-32
Accrued expenses and other liabilities	-2,257	-2,502	-2,992	-2,938	-3,053	-3,186	-3,348	-3,464	-3,573	-3,683	-3,799	-3,918	-4,043
Derivative Financial Instruments	-2	-191	-190	-242	-185	-180	-200	-209	-217	-231	-248	-268	-287
Provision for aircraft maintenance on operationg leased airci	-133	-133	-131	-129	-128	-127	-126	-124	-123	-122	-121	-120	-118
Deferred Tax	-474	-396	-461	-419	-477	-533	-580	-586	-638	-654	-671	-686	-703
Other creditors	-12	-3	0	0	0	0	0	0	0	0	0	0	0
Derivative Financial Instruments	-3	-416	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8	-8
Total Core Invested Capital	4,804	4,933	5,853	5,248	6,226	7,167	7,901	7,899	8,794	8,990	9,212	9,399	9,604
Total Non-core Invested Capital	2,901	2,127	1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481	1,481
Net Financial Assets	-3,282	-2,591	-2,119	-4,964	-4,584	-4,953	-4,573	-4,248	-5,622	-5,297	-4,972	-4,647	-4,322
Shareholders' equity	**4,423**	**4,469**	**5,215**	**1,765**	**3,123**	**3,695**	**4,809**	**5,132**	**4,652**	**5,174**	**5,721**	**6,232**	**6,763**

Cash Flow Map													
€M	2017	2018	2019A	2020F	2021F	2022F	2023F	2024F	2025F	2026F	2027F	2028F	2029F
Core													
EBIT	1,533	1,669	1,013	1,679	1,816	1,723	1,750	1,769	1,679	1,621	1,497	1,378	1,203
Statuatory income taxes	-192	-209	-127	-210	-227	-215	-219	-221	-210	-203	-187	-172	-150
Tax Adjustment	31	42	59	42	46	43	44	45	42	41	38	35	30
NOPLAT	1,372	1,502	946	1,512	1,635	1,551	1,576	1,592	1,511	1,459	1,348	1,241	1,083
Depreciation	-498	-561	-641	-627	-684	-739	-790	-802	-859	-890	-924	-957	-991
Net Movements in Cash flow reserves	523	-582	634	0	0	0	0	0	0	0	0	0	0
Operational Cash Flow	2,392	1,482	2,221	2,139	2,319	2,291	2,366	2,394	2,370	2,350	2,272	2,198	2,074
Invested Capital - Fixed Assets	7,261	8,170	9,176	8,453	9,605	10,720	11,662	11,781	12,830	13,145	13,491	13,804	14,137
Net CAPEX	-1,450	-1,471	-1,646	96	-1,836	-1,855	-1,732	-921	-1,907	-1,205	-1,270	-1,270	-1,324
Investment in NWC& Others	123	780	86	-118	174	174	208	121	153	119	124	127	128
Investment Cash Flow	-1,327	-691	-1,560	-22	-1,662	-1,681	-1,524	-800	-1,754	-1,086	-1,146	-1,144	-1,196
Unlevered Free Cash Flow	1,065	791	661	2,117	657	610	842	1,594	616	1,263	1,125	1,055	878
Non-Core Free Cash Flow	160	775	636	0	0	0	0	0	0	0	0	0	0
Free Cash Flow to Firm	**1,225**	**1,566**	**1,297**	**2,117**	**657**	**610**	**842**	**1,594**	**616**	**1,263**	**1,125**	**1,055**	**878**

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Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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A Work Project presented as part of the requirements for the Award of a Master Degree in Finance from the NOVA – School of Business and Economics.

The impact of Brexit in Ryanair's share price

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A Project carried out on the master's in finance Program, under the supervision of:

Rosário André

3rd January of 2020

Abstract

The aim of this paper is to assess the impact of political uncertainties surrounding Brexit in Ryanair's stock price and additional effects on valuation conclusions.

The stock market has been affected by several decision taken, and Brexit was one of the reasons pushing down airlines stock prices in 2016. Therefore, the magnitude of a decrease in U.K. 's demand following a no-deal Brexit may result in several outcomes over Ryanair's share price.

Keywords: Demand, Uncertainty, Share-Price, No-deal Brexit

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Literature Review

Political and economic decisions can significantly affect the stock market and Brexit was not exception, the day after the referendum announcement, where was voted that U.K. would leave EU, have a strong impact with the global stock market losing around 2$ trillion (Quaye, I., Mu, Y., Abudu, B., & Agyare, R. (2016)). Besides some Index suffered drastic change such as, FTSE 250, an index that has in its composition some British companies, decreased around 7.2% (Riley &Long, 2016) as well as the FTSE 100 that dropped by 3,2% in the day after the decision. However, this change was also reflected in the US stock market with S&P500 dropping 3.6% and Nasdaq decreasing over 3.4% (Mackenzie & Platt,2016).[29] Additionally, European stock index composed by the five biggest stock markets in Europe (France, Italy, German, Spain and U.K), which countries are representative in Ryanair's operations, also experienced some losses (Matthias,2019)[30].

On the other side, by analysing the Brexit reaction in the stock prices by sectors, it can be seen that the stock prices in airline sector were the ones that declines the most after the Brexit announcement, since it influence negatively free trade agreements, namely between U.K. and EU (Selmi.R,Bouoiyour, J., 2018)[31]. Thus, the global airline sector presents an average decrease in the share price of 25%[32] , with U.K airlines decreasing on average 33% (kpmg,2016) from 21st to 27th of June 2016. Therefore, it is expected Ryanair's share price to reduced due to Brexit outcomes.

[29] Quaye, I., Mu, Y., Abudu, B., & Agyare, R. (2016). Review of Stock Markets' Reaction to New Events: Evidence from Brexit. Journal of Financial Risk Management, 5, 281-314. Retrieved from: https://file.scirp.org/pdf/JFRM_2016123011255805.pdf

[30] Raddant, Matthias (2016) : The response of European stock markets to the Brexit, Kiel Policy Brief, No. 100, Kiel Institute for the World Economy (IfW), Kiel. Retrieved from:https://www.econstor.eu/bitstream/10419/156089/1/882200887.pdf

[31] Selmi, R., Bouoiyour, J. , (2018).Are UK industries resilient in dealing with uncertainty? The case of Brexit. Retrieved from: https://hal.archives-ouvertes.fr/hal-01736632/

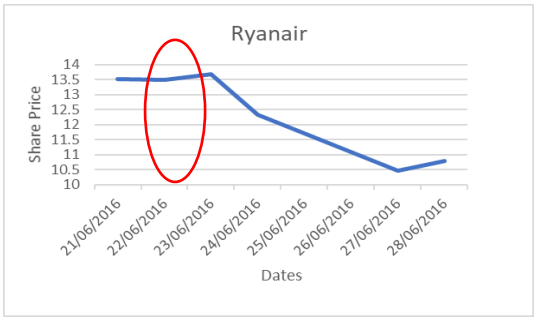
[32] Brexit implications for airlines, KPMG (2016). Retrieved from: https://assets.kpmg/content/dam/kpmg/cl/pdf/2016-11-kpmg-chile-advisory-brexit-airlines.pdf

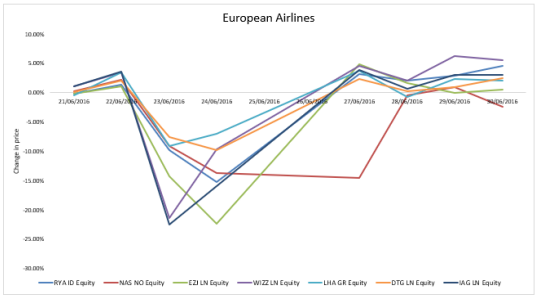
Contextualization

Ryanair is a low-cost airline, that have headquarters in Ireland, it has the largest European airline group, composed by Ryanair U.K., Ryanair Sun, Malta Air and Lauda motion. It operates in several countries, among others, U.K, German and Italy.

The company operations are mainly performed in Europe, being most of the flights between countries that belongs in the European Union. Therefore, Ryanair take advantage of the single travel market provided by European Common Aviation Area (ECAA).

As the majority of airline sectors, Brexit as affected the Ryanair's stock market





Source: Bloomberg

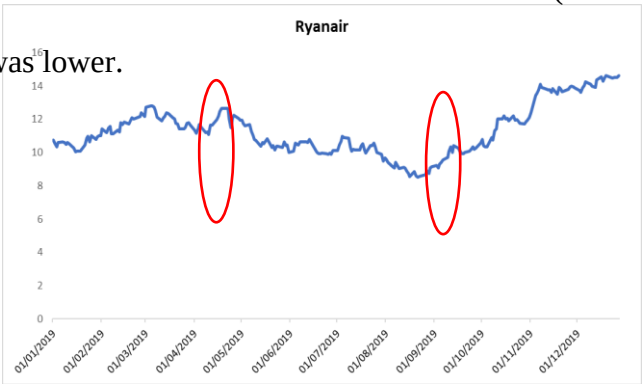
Between day 22nd and 28th of June 2016, the Ryanair share price decreases, this can be linked, as mentioned above, with the Brexit referendum announcement on 23rd of June of 2016, that results in a decrease of 21% in the share price.

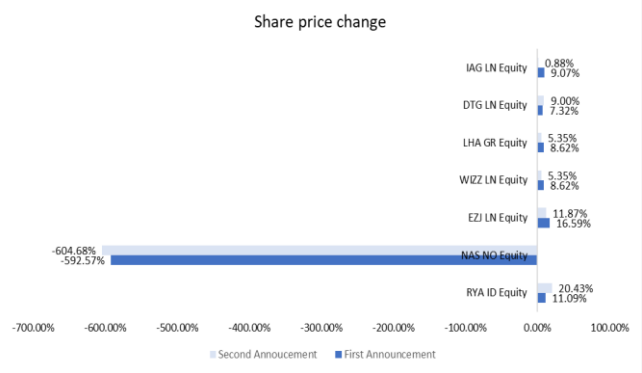
However, analysing the main European comparable of Ryanair, we can conclude that this political event was most harmful for airlines whose headquarters where in London, such as Easy Jet with a 29.67% decline in the share price in the period of analysis and IAG with a decrease of 29.13%.

Airline	Ryanair	Noreweigian	Easy jet	Wizz Air	Lufthansa	Dart Group	IAG
Price decrease	-20.19%	-14.56%	-29.67%	-22.51%	-9.94%	-12.94%	-29.13%

Additionally, it was expected that the Brexit would take place on 29 March of 2019. However, during in 2019 it was announced two postpones of the deal,, which caused a positive reaction in the share price of airlines in Europe, namely by the first announcement in 10 April of 2019 the Ryanair's price increase

between 9th and 17th of April by 11% in Ryanair's share price and by the second announcement made by 28th of October result in an increase of 20% (between 28th/10 and 7th /11). For the other airlines the increase was lower.





Besides, Ryanair U.K is one of the largest subsidiaries of the group, their revenues account for 22% of the total group's revenue in the fiscal year 2019. Therefore, the risk of a non-deal or Hard Brexit can be significant for companies' operations. Since the announcement of the referendum in 2016, the company decided to guide its growth away from U.K airports to focus on the other European airports, and hence, the contribution of U.K revenues in the total revenues decreased in the last three years.

Revenue	2014	2015	2016	2017	2018	2019
United Kingdom	25%	27%	28%	25%	23%	22%

In Anticipating a hard Brexit, Ryanair pretend to establish an air operating certificate by CAA (Civil Aviation Authority), to grant its right to continue to carry U.K operations, performing flights from U.K domestic routes and non-EU after Brexit.

Non-deal Brexit implications

The Air transports in Europe Union are insert in the European Common Aviation Area (ECAA) that is regulated by the European Aviation Safety Agency (EASA), with the aim of creating a single aviation market and bring economic benefits for air travellers and air industry. Once the UK leaves European Union it will be leaving the ECAA and its air transports would no longer be regulated by EASA.

Thereby, under a non-deal situation, Brexit can impact Ryanair's business concerning inter alia, the situation of UK in relation to EU and the potential lack of freedom when flying between UK and the

Europe Union. Any small change in these previous aspects can harm Ryanair operational results substantially.

Analysing the lack of freedom impact , it is expected that UK GDP being 2.5%-3.5% lower than the actual scenario, being the GDP a proxied for air traffic demand it is expected that the UK air passengers traffic reduced between 3-5% by 2020 (IATA,2016). This reduction is directly related to potential difficulties in performing flights between U.K and EU countries.

Therefore, in order to asses this impact in our valuation, we performed three scenarios, that reflect the estimated reduction in the U.K passenger traffic, since this market has a representative weight in Ryanair's operations.

Considering the current Ryanair's average fare of 37.02€ and number of passengers142m in the Fiscal Year of 2019.

By incorporating the impact of estimated passengers decrease of United Kingdom in the Ryanair's demand it is assess different impacts on the company's share price. The total revenue estimated was calculated by each scenario according to the following formula:

Estimated revenue (2020) = (1-decrease in passengers)*Revenue 2019

Considering a percentage of EBIT in total revenue of 21% FY2020, it is possible to obtain the estimated EBIT for every scenario, through the formula:

Estimated EBIT(2020)= EBIT/Revenue (2020)*Estimated Total Revenue (2020)

In order to arise in an estimation for the enterprise value it was take into account the EV/EBIT multiple of 13.39 obtain trough DCF approach in our base scenario, the one considered in the report.

Therefore, the EV was obtain by: ***Estimated EV (2020)=EV/EBIT * Estimated EBIT(2020)***

Decrease in passengers in 2020	#Passengers	Estimated Revenue	EBIT	EV	Share price	%Decreasing
3.00%	138.77	7,518.68	1595.83	21,375.24	15.79	5.87%
4.00%	137.34	7,441.17	1579.38	21,154.88	15.59	7.02%
5.00%	135.91	7,363.66	1562.92	20,934.51	15.40	8.18%

Base Scenario	
EV	22,493.37
Non core Invested Capital	1,480.90
Net Debt	4,963.97
Equity	19,010.30
#Shares	1,133.40
Share Price	16.77€

Assuming the same values of net debt and number of shares as the ones obtain in the fiscal year 2019, it was possible to arrive to different share prices. However, in our DCF approach considered in the overall report the Ryanair's share price obtain was 16.77 €, under this scenario is noticed a decrease in share price being the worst-case scenario the one where the air traffic demand decrease by 5%, and the least impactful the one where the demand decrease by 3%. These results present a decrease of 8.18% and 5.87% respectively.

However, it is noted that the decrease in United Kingdom demand it does not cause a significant decrease in the Ryanair's share price.

Conclusion

Considering the different scenarios of decrease in demand due to Brexit, the one with a 3% decrease result in the same recommendation as the one in the general report, **BUY.** However, for the remain scenarios with higher decreases of 4% and 5%, the resulting price as well as expected return is lower and hence our recommendation changes to **HOLD**. A further research could be to analyse the impact of the Certification Aviation that Ryanair pretends to have with U.K. and the role of its subsidiary, Ryanair U.K under this scenario.